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PSYCHOLOGY AND SCIENTIFIC METHODS



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PSYCHOLOGY AND SCIENTIFIC METHODS

FATE AND FREE WILL

NO subject has been more debated in philosophy, none by debate has been worn more threadbare, than free will. And, sad to say, without leading to any generally accepted conclusions, or removing certain painful doubts that weigh upon the minds even of the most cultivated and hamper or impede their actions. I was lately reminded of this in reading the wonderful panorama which Thomas Hardy unrolls in his epic play *The Dynasts*. He there introduces a chorus of spirits who comment wisely, or feelingly, or cynically, on the events of the Napoleonic history; the *Spirit of the Pities* representing human hopes and fears, the *Spirit of the Ages*, passionless insight, etc. I was charmed to find a great man of letters, the last of the older generation remaining to us, basing his criticism of life on a thoroughly modern and scientific philosophy. But I soon became aware of a flaw (as I must hold) in this philosophy—it was fatalistic; and, on probing further, the fatalism was found to be due to monism, to Mr. Hardy's acceptance of monism as not merely the prevailing fashion, but the last word of a scientific metaphysics. Napoleon, in the sequel, was held up to admiration as wiser than his fellows because he felt the inherent fatality of things, and regarded his lust of conquest and ruthless ambition and general bloodthirstiness as independent of his will and forced ineluctably upon him. In short, there was at the center of the universe an inscrutable power that pulled the strings, and to which our human thoughts and actions could only passively respond, and the strongest of men was also the wisest, if he saw this to be so. And for progress, for escape from the principles and passions of Napoleon, we can not trust to ourselves, but can only hope that the blind power that rules the world will eventually guide it into milder and more beneficent channels. Now this fatalistic philosophy seems to me, as I say, to be flawed; and it may not be useless to point out to those upon whom it imposes, and who suffer from it, wherein the flaw consists.

I am not going to assert that we feel the will to be free, and that therefore it must be so, and the conclusion that the world is entirely

governed by the law of cause and effect must be wrong. Doubtless there is some truth in this way of stating things—for human instinct rises superior to all sophistication—but it does not bear the truth upon its face. I am going to maintain that the world is governed by cause and effect, but that nevertheless we are free, in the sense in which Napoleon felt himself not free—free, and able, if we will, to realize the ends we have at heart. We are not playthings of a blind or cruel power upon whose pleasure we must wait, even though all our acts are caused—we are *nostræ fortunæ fabri*, and the fatalistic conclusion rests upon sheer fallacy and illusion.

What is it to be free? You can not be free unless you are free *from* something; what is it from which the will is free? It is free, first, from the necessity of deciding upon any one course of action, rather than its opposite, or than no action at all. It is free, antecedently, from the necessity of deciding at once, in advance of the most mature deliberation. In a word, we can choose, and take our time about it. We can weigh what it is we contemplate doing, and realize how our feelings and inclinations and previsions and deepest instincts bear upon it. We can make quite sure what we want before we speak the final word. So that, when the decision finally comes, it will be the expression of our innermost, our entire nature. Now this is what we originally and properly mean by our wills being free. And this is the only kind of freedom essential to morality. Moreover, it is an obvious and undeniable fact, a fact of experience; nobody can question that we are free in this sense. I propose to call this our *empirical* freedom.

You can not then say, in this sense, that we feel as if we were free, and therefore we probably are so. This is to introduce the other kind of freedom, the uncausedness of our decisions—*speculative* freedom, as I shall call it, because it could only be established by speculation—and make the feeling of freedom an argument for it. But the feeling of freedom is the feeling of our empirical freedom—it is the feeling of freedom in the sense in which freedom can not be denied without absurdity. Speculative freedom, on the other hand, is one theory of choice, the theory that it is uncaused, with another theory, the theory that it is caused, opposed to it. To argue from empirical to speculative freedom is thus to offer the *fact* of choice as a proof that one *theory* of choice rather than another is true. And if it be true, as I have suggested, that empirical freedom, which is undeniable, constitutes the real and sufficient foundation of morality—being that which makes it possible for us to be counseled, advised, warned, held responsible, and, in short, to conform or not to conform to the beneficent customs of society—then it is equally irrelevant and impertinent to urge the

necessities of morality as an argument in favor of speculative freedom. Speculative freedom is needed, it would appear, not for human morality but for divine—that the Being who made the universe may be justified in punishing us, his unfaithful creatures.

Empirical freedom, then, is consistent with universal causation. But it would lose its value if the causes of the will were conceived as depriving it of reality and efficacy—if, that is, we could say to ourselves with truth that the will is only an appearance, a puppet pulled by strings from the center of the universe or a wave swept passively forward by forces out of the past. The will is myself willing, the concrete state of the psyche at this moment as producing results that the psyche foresees and approves; and the question is, therefore, whether the psyche or self is a force, a reality, or whether, on the other hand, it is a mere shadow cast by the one reality and force of the universe. Now to this question it seems to me that a man's self-knowledge and self-respect should give the answer. Am I NOTHING? Shall I allow myself thus to be elbowed theoretically out of existence by the Absolute? When I say "reality" or "existence," what do I mean but precisely such being as I feel myself to possess; and how then can I *deny* my own existence or reality without abusing the words? In truth, the doctrine that a central unity of things is more real than the self rests on specious reasonings, or uses the word "real" in a new and strange sense. If in the proper sense I am real and you are real, and things outside us both are real, reality can only be plural. And will, which is the active aspect of some parts of reality, must have the genuine, though limited efficacy which belongs to it as a force among other forces. The "block universe" (by which I do not mean the universe as bound together by cause and effect) is thus the enemy of empirical freedom; but the block universe is an illusion. Let us not be misled by Napoleon's belief in his "star." Napoleon was a great conqueror and forerunner of the *Boches*, but he was not a competent authority on metaphysics.

Granting that things are plural and that the will is determined by causes, it may seem that this last fact involves a discrediting and annulment of empirical freedom as much as if the universe were One. Again a speculative *conviction* threatens to eclipse and modify empirical *fact*. For if at some past date I could have surveyed all the elements of my nature and foreseen all the coming impacts of circumstance upon it, I could have predicted with certainty my present volition. Thus, we incline to say, I am in the passive grip of the past and not my own master. Let us ask, in the first place, whether, when the time comes, I shall remember my prediction with its data and the sense of rigid determination it involved. For this would

indeed be a paralyzing thought. The answer must be in the negative. For if, when the time comes, to all the determining elements I foresaw, the knowledge of their determination were added, a new element would enter into my act, and I should not have foreseen correctly. Hence, it belongs to the requirements of the supposed case that the eventual act should be naïve and unself-conscious. You can not know about your acting, at the time when you act, without your action becoming a different one. But, in that case, we are rid in strictness of analysis of the paralyzing thought! In the second place, and still more important: when we come to act, those antecedent causes—the elements of our nature and the impacts of circumstance—are no longer real, and all that is real and operative is our *present* nature; in short, our will. This it is, and this alone, which will determine our act. How then is our will powerless, or vitiated by its connection with the past? Would we have our will different—is not what we will . . . what we will? Do we accuse the past for making us will what we actually will? Could we have our will undetermined, how should we wish it to be different? And if we should not wish it to be different, what disadvantage is it that it is determined?

To sum up: the will, though determined by the past, is (1) alone now real and efficacious, and it is (2) just what we wish it to be. What possible blot does its determination then cast upon our empirical freedom?

Freedom having thus been delivered from the clutches both of the past and of the Absolute, the two main illusions have been pricked that make men fatalists. The self is thereby left in a singularly able and responsible position. How responsible, will be seen if we consider the bearing of the foregoing on one of the problems that most exercise the human mind: whether the universe is on the side of the Good, that is, of what we human beings fundamentally will. Nature seems indifferent, its general action is like its weather; and, at such a time as the present, we get the feeling that a great part (not the greatest part, thank Heaven!) of the human race is hostile to what we will. In despair of finite help we turn to the Nature of Things (which we distinguish from Nature!) and say to ourselves that we must perforce assume it to be on the side of the Good. But we should perhaps do well to remember (1) that the world would be a tolerably satisfactory place to live in if it were not for human beings; (2) that a majority of these presumably have the same fundamental will which we find in ourselves, and, even if not, could probably be brought to see that good (*i. e.*, cooperation) is more profitable than evil (*i. e.*, warlike and other competition); (3) that it may well be that, since the predominance of good is so

important to us, and since we are empirically free, it has been left to us to secure its predominance by our own efforts. We should be ill-advised, in our half-hearted and questioning way, to trust to an abstract tendency toward good in the universe if we ourselves neglect to exemplify it. The best universe for human beings would perhaps be one in which it was left to them to work out their own salvation.

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THE PHILOSOPHY OF LOYALTY

I PROPOSE to look briefly at certain aspects of the attempt by Professor Royce to restate ethical theory in terms of loyalty as the supreme ethical ideal and end. The book has had a considerable influence, at least with the layman, and very likely is destined to have more. Of course, in Professor Royce's own mind it stood as a corroboration of his own favorite brand of metaphysics; but except in an indirect way it is not as metaphysics that I wish to approach it. Many of Professor Royce's readers who have had no inclination to adopt his idealism and absolutism have doubtless felt the persuasiveness of his ethical teaching; and it is as ethics that I am interested in it here.

Now loyalty has some pronounced advantages over the formulas that have been most prominent in the past. It carries with it an objectivity, a bigness, a sense of worth-whileness, with which a more self-centered ideal does not find it easy to compete. Set it alongside a pleasure theory of the good, and its emotional superiority is at once manifest; and it maintains in a measure the same advantage over the subtler end of self-realization. There is a freshness, a disinterestedness, an absence of the petty and the merely personal about "devotion to a cause," which makes a strong natural appeal to our admiration and approval, provided we can get men in a mood where self-interest does not distort their sense of natural values.

But such considerations do not cover the entire field of popular ethical opinion, or reign supreme even in disinterested reflection; there are also natural doubts that arise about the claims of loyalty. So, for example, the greater the insistence that any plan of life comes not from within, but from social patterns already in existence, the more the dangers of "conformity" rise into view. Professor Royce does not ignore this wholly; but his rejoinder seems to miss in an important respect the point of the charge. We avoid the evils of conformity, he says, by throwing ourselves with enthusiasm into the

conforming act, turning what otherwise would be imitative docility into conscious willingness, glorifying our part till self-sacrifice seems to become self-expansion.¹ But it is not merely through its tendency to deaden the sense of conscious choice and emotional realization, and to become mechanical and compulsory, that conformity gets its bad name; this rests also on the unfortunate practical consequences to which it often leads. And if it contains essential sources of evil in itself, we do not get rid of these by glorifying it. Professor Royce may at bottom only mean to say that any loyalty is better than none. But his words naturally imply a good deal more than this; if loyalty as such constitutes the very essence of virtue, we are easily led to infer that its presence is the one thing needful, and so to play into the hand of the social conservative, who has always been ready to eulogize "loyalty" in the interests of the *status quo*. Of course for a philosophy which denies change, and holds the good to be eternally existent, it may be natural that mere adjustment to this eternal good should appear the highest virtue; but if we ground virtue not on its deducibility from an *a priori* system, but on practical human judgments, it is clear that, outside of Germany, at least, there is a reputable body of ethical opinion which would insist upon the dangers of conformity as such, even though the subordination it calls for be accepted willingly and without sense of compulsion.

The point is brought into relief when we turn to the more specific virtues which grow out of this emphasis. They are, in Professor Royce's words, service and obedience. Now the latter virtue, in particular, calls attention to the risk that attaches to an over-insistence on the claims of loyalty; and it is unnecessary to enlarge upon the familiar case that can be made against the value—the social value even—of a conscientious cultivation of the habit of social subservience, as opposed to a self-reliant spirit of individualism and democratic liberty. However, I am willing to give Professor Royce the benefit of the doubt here. In such a case, then, obedience does not mean submission to authority, but only an unforced acquiescence in the social good as a supreme end. Obedience, that is, means no more than an ideal of social service. But here also the ethical road is not free from difficulties. Whatever one's enthusiasm for service, one can hardly refuse to see that this ideal has, latterly in particular, called forth a vigorous reaction, which the chances are against supposing is purely perverse and mistaken. At least it can not be denied that the plea of "service" and "humanity" has in practise been the occasion of a good deal of questionable self-deception and sentimentalism. And in theory also it would appear that undesirable

¹ *Philosophy of Loyalty*, pp. 38, ff.

consequences are closely bound up with the conception, when it is really taken in earnest. This will perhaps be more obvious if we substitute the alternative phrase "self-sacrifice," as Professor Royce himself constantly does. Now self-sacrifice as an ultimate ideal presents very considerable difficulties; and in opposition to it individualism and self-realization have always been able to make out a reasonably strong case for themselves. Certainly "freedom" means something much more significant, for practise, than Professor Royce's use of it would have any tendency to suggest. At its best, the demand to be "free" is no mere selfishness; it is not a wish to throw off all objective claims in the interest of personal gratification or aggrandizement. Rather it stands for opportunity to choose the thing that to ourselves seems most objectively worth the doing, instead of having our standards of worth settled for us by abstract and conventional social judgments. For "social service" is much too apt in practise to translate itself into terms of convention and existing social arrangement, which thus claim to cast us in their special molds; and freedom is, therefore, an extremely useful word to set over against service, not as taking conduct out of the social realm, but as an assertion of our right to pass our own judgments, and shun, if we choose, the compromises and subserviencies that official morality loves to impose. And this claim to the right to be free to express one's inner self, as against the insistence that it is man's business to ignore his personal satisfaction, and throw himself self-sacrificingly into the embrace of a cause, I can not feel at all convinced that Professor Royce has met by anything save a confusion of the issue.

The difficulty I find in following Professor Royce here is worth dwelling on. So far as words go, I fully agree that he has seemed to anticipate the foregoing objection. He does not think that we are really giving up our own satisfaction by subordinating ourselves to a cause; on the contrary, he insists that only thus do we secure our personal ends.² But then why speak of self-sacrifice at all? If a man, because he likes the idea, raises a family, or joins a lodge, or enters the service of the state, the mere fact that he is now finding his satisfaction in a context of life wider than his private self does not carry the implication that he has sacrificed anything. If "self-sacrifice" does no more than stand for the fact that human life is, empirically, not self-centered and isolated, the modern individualist is usually perfectly ready to agree. Taking his start from the other end, he willingly admits that human nature is normally so constituted as to be realized only in a social medium; but where then is there any real issue to be joined? Now the need of further clearing

² Pp. 131, ff.

up the issue is hidden from Professor Royce because of his strong disposition to reduce all philosophical controversies to a battle between logical extremes. If the claim is made by individualism that a man's good is determined from within, in terms of his own nature, then for Professor Royce this has to mean that it comes *merely* from within, is discovered by looking *exclusively* to the inner desires and not at all to the surrounding world, is constituted by the *mere* play of chaotic and non-rationalized impulses.³ So interpreted, the battle is already won; of course individualism must give way to a "social" ideal. But I suppose it is quite possible for an individualist to hold that while a man's own nature, thought of in very specific terms as the potencies of a particular animal organism, sets for him the goal of living, yet this nature is not given full panoplied at the start, but is defined progressively in terms of the conditions, social and otherwise, under which it is forced to get expression; and that the original separate and undeveloped instincts have, therefore, to subject themselves to reason. And this once allowed, Professor Royce's polemic falls for the most part to the ground.

With such an interpretation of individualism as this, however, one may come back again in reply, Professor Royce has no quarrel; indeed he expressly makes it a part of his own doctrine. But does he? or indeed is it possible for him to do this, and still give to "loyalty" the distinctive turn that makes of it a new contribution to ethical philosophy? It might first be remarked that if he insists on identifying individualism with the extreme of ethical anarchy, he can hardly in fairness object to an opponent for interpreting his own position in terms of the other extreme; though I do not of course want to press such a purely tactical point too far. In reality, however, the whole matter of his argument seems to me all the time veering in just this direction. Let me ask again: if individualism, in the sense in which it is maintained by instructed opponents—and Professor Royce certainly does not mean to attack a man of straw—allows that human nature has to be rationalized and socialized, then how precisely is his own theory to be distinguished from it? And so far as I can make out, the only thing that is left as a significant issue is just this, that whereas the individualist holds that a man's good, as a concrete something capable of being distinguished from a host of other conceivable goods, can be located primarily by reference to a particular fact in the total world, the group of concrete possibilities of satisfaction making up a determinate human being, Professor Royce denies this, and maintains, on the contrary, that it is to be found in a totality of social conditions, which ultimately leads us to the world whole as the ideal limit.

³ Cf. p. 43.

Now *if* this is so, then the objections previously urged seem to be genuinely pertinent. And *that* it is so, is borne out by his argument as a whole. It is true that, verbally again, he occasionally seems to be talking a language that the individualist can recognize as his own. For after urging that it is loyalty to a social whole which constitutes human good, and that from this whole we get concretely our ideals, he goes on to declare that in the multitude of such ideals the individual is to choose the one that is peculiarly his, and that meets his individual demands. But so far as either his premises or his main conclusions are concerned, this has the look of being an inadvertence. The ground for supposing that there is a kind of life, *independent of his social milieu*, which is specially suited to this given man as distinct from all other men, has not been shown us; and once granted, it is bound to claim a much more constitutive share in the good life than Professor Royce's theory assigns it. That such a ground exists, and constitutes the very meaning of individuality, is indeed the individualist's main plea. He would agree that in the accepted patterns of social experience we have what is highly important for giving us *suggestions* of possible ways of conduct, which immensely advance and expedite the affairs of life, and apart from which we should be thrown back entirely upon the tedious process of personal experiment. But this still leaves out the really important matter; it does not tell us how to *apply* these norms to the needs of the individual case, the new and personal situation. We utilize suggestions as convenient tools, but they do not settle anything; for this we have to fall back upon a creative judgment—which constitutes in so far a *new* plan of action, never before in existence—and upon the test of personal satisfaction. "A man's self," Professor Royce writes, "has no contents, no plans, no purposes, except those which are, in one way or another, defined for him by his social relations."⁴ If this means only that life is lived, not in the recesses of one's private self, but in a world, which thus is a requirement for giving concrete form to the expressions of the self, it of course is true; but it distinctly is *not* true—though this is what the argument seems to need—that in the environment we have, not merely a condition necessary to self-definition, but an authority which supplies ready-made ideals, our only business being to get ourselves identified with one of these ideals. In itself, apart from the leading of our personal demands upon it, the "world of social conventions, deeds, and causes" is just as "chaotic" as man's inner nature. And the difficulty is already present in the original appeal to social standards. Professor Royce takes these as if they needed no explanation, and were already on the ground to be adopted; but it surely is a natural question to ask,

⁴ P. 94.

How did these norms themselves come about? They were not always in existence, nor did society as a whole discover them; they could only have come from individual experiment and insight—still under social conditions, to be sure, but no one supposes they originated in a void. In a word, “loyalty” suggests a sort of universe in which the primary need is to attach ourselves to causes and institutions already settled, and calling, therefore, only for obedient service; it has no recognition for the importance of our own creative activities, and the desirability of constantly reshaping ethical ideals and programmes.

And waiving this need for active reconstruction in ethics, we are not even told how to go about the simpler task of making our choice between causes already on the ground. Strictly, I think, we should be led to expect from Professor Royce’s logic, when it becomes a question of how we are to select our ideal in the concrete, not a reference to individual suitability, but another sort of consideration. We should expect to hear that a man’s career is determined by the station in life to which it has pleased God to call him, in a world in which the particular sort of career is rather unimportant, since all alike that is ministers to the glory of God. This is a determinate way of getting real guidance, and a familiar one. And with this as our interpretation, too, “obedience” and “self-sacrifice” get their natural meaning. Do not think of what *you* want, or what would satisfy *you*; that is selfish and anarchistic. Follow rather the ways of your society; fill the position in which you find yourself; and turn this into satisfaction by laying the unction to your soul that you are engaged in service to the best of all possible worlds. Professor Royce to be sure does not say this; if he did, the situation would be greatly cleared and simplified. But neither does he take seriously his reference to individual demands, and show us how this would work, and on what basis it rests. And the consequence is, as I say, that we are given no way at all to guide ourselves. We are to be loyal, but loyal to what? Of all the infinitely varied forms of living—and the majority of them could in some fashion be interpreted as social—which are we to adopt? All would be easy if, once more, to choose were not required of us, and “virtue” lay solely in a docile and unquestioning subservience to some social group, of which it could be assumed for whatever reason that we are already safely a part. And Professor Royce’s illustrations offer us no appreciable help. He devotes several pages, in particular, to the case of General Lee,⁵ torn between the opposing claims of state and nation. But after reading carefully what he has to say, I am quite at a loss to discover how, as between two opposing claims to loyalty, the maxim,

⁵ Pp. 183, ff.

"Be loyal," can be used to mediate a decision; to all appearance the practical outcome is no more than this, that *somehow*, with or without reason, you must choose your side, and that then you are to give the best that is in you, and never to look back.

But this, it may be said, is to overlook precisely the important point. Professor Royce does give a real principle of choice, and that principle is, Be loyal to *loyalty*, or, So act that the sum of loyalty may be increased in the world. Try however as I may, I fail to get the point of view from which this can be translated into important practical counsel. If, as I have said, the principle meant that I am to accept loyally the position that social forces prescribe, then indeed it would be definite, though often very bad advice; but barring this, it seems to leave my "cause" quite indeterminate. And indeed Professor Royce remarks that about the choice of our true vocation it is not supposed to offer us any information. Does it then give us a method for settling questions of conscience and of conflict? By assuming a good deal that ethical theory is commonly supposed to justify, I can indeed see how on occasion I might be able to turn it into a maxim of conduct. Thus granting loyalty to be in an absolute sense a virtue, it might perhaps tell me not to bribe a man to betray his cause. But for the greater number of our human problems, the light that it can throw is of the dimmest. By reading between the lines, I seem to get two possible transcriptions of the formula; but neither of them strikes me as very enlightening. One comes out in connection with Professor Royce's attempt to reduce truthfulness to loyalty. Be truthful, we are told, because thus you advance the cause of loyalty to truth—for the sake, that is, of setting a good example to your fellows, and thus spreading the hold of loyalty on mankind.⁶ Now in the first place I very strongly object to having my life ruled by the necessity of "setting a good example." I can imagine few things more conducive to the encouragement of priggishness, or that threaten more to subordinate personal achievement, and a personally realized sense of good, to the demands of social conformity. Surely there is little question who evokes more our natural liking and admiration, the man who tells the truth that he may serve as an exemplar to other men when they are tempted, or he who refuses to lie simply because in the capacity of a liar he could not retain his self-respect. And this suggests the second and more fundamentally logical objection. Any attempt to reduce the rest of the virtues to loyalty fails to take sufficient account of the fact that the worth of loyalty is relative to the independent value of its object. Even if I accept a desire to set an example as a motive to truth telling, it constitutes a valid motive only as truth is itself

⁶ Cf. p. 135, *et al.*

admirable; and to tell me to be loyal to that which deserves my loyalty is to offer me no practical means of settling what does deserve it, and what does not. And the more loyalty is defined in terms of allegiance to a social group—the thing to which in the end Professor Royce reduces a “cause”—and not to certain qualities of life or forms of conduct, the more impossible does it become to determine the “good” except as bare consistency, or submissiveness, in our given social relationships, and the less real ethical content, therefore, does loyalty contain. I agree with Professor Royce that true loyalty is not to isolated persons. But neither is it to personified super-individuals; for this last leads inevitably to the service of abstractions, than which there is no more dangerous snare to the man of ideals. Try as we will to keep the “cause” concrete, the more we emphasize Professor Royce’s interpretation, the more in practise does it evaporate into abstract institutional forms—“family, community, country.” And I see no alternative save to keep our eyes fixed very closely, not indeed on mere individuals irrespective of their worth, but on the forms and consequences of the good life as only individuals can lead it, and for which the concrete personal happiness of men and women, not a super-personal perfection, supplies the only final test. And this calls for an independent recognition of “goodness” before loyalty can be imposed.

If we refuse to follow this path, then the only obvious way of escaping the pure indeterminateness of the formula is to try to define the good in terms of social inclusiveness, or extent. In the end we are brought back to the rather grandiose conception, “Be loyal to the universe, the all, the harmony of human causes in one comprehensive cause.” But here the same difficulty still crops up. If we are in the proper devotional mood, it may perhaps seem for the moment an answer to our question to be told to subordinate the less to the greater, the part to the totality of good. And this *does*, once more, give a specific rule for action, provided I mean by it: Submit, don’t be a rebel. But if we are still disposed to think this bad advice, it only emphasizes the fact that otherwise we are left with no practical directions of any sort. To tell us to be true to the universe is to put us off with high-sounding words. If when I ask, What is good? I am answered, Why, it is to choose the greatest totality of good, I am told nothing at all; what I want to know is: Just what for me is the greatest good, in a world filled with all sorts of competing claims? Not only is it out of my power to calculate the measure of good in terms of the infinite; even to make a start on such a task, I first must be acquainted with the elements of good in some independent way. And the principle of loyalty, in terms of a maximum, thus presupposes as already known what it is our primary

business to uncover. That we should "live in some sort of tolerable relation to our social order" is indeed one condition of a good life; but it supplies no "plan," unless again we presuppose that this tolerable relation is one of docility to the existing arrangement. The best the formula can do is to define a negative condition for the determination of the good. Avoid unnecessary conflict with other forms of loyalty⁷ is the most specific way in which Professor Royce anywhere puts his meaning; and for certain purposes I think that this, when properly interpreted, is sound advice. As a requirement for that free experimentation through which alone the content of human satisfaction can be elicited, the doctrine that men should be left as far as possible without interference to make their own choices, and try them out, as against the rival claim that other people should settle matters for them, has a good deal in its favor. But the very statement signifies that this mutual tolerance does not *constitute* the good, but only supplies normally the occasion for its discovery. And left in Professor Royce's wording, as an avoidance of conflict with other forms of *loyalty*, it suffers as well from the ambiguity I have already noted. Men can be loyal to a *bad* cause; and since in this way they may interfere with the rights of other men, their loyalty *may* need to be suppressed. Accordingly some further standard must exist by which the worth of loyalty is tested, not capable of being put in terms of loyalty itself. The loyalty of the Germans does not call for tolerance, but for aggression—not because other nations might not remain perfectly "loyal" even under German rule, but because German victory would prove an intolerable interference with human *good*.

It remains to ask more definitely wherein lie the peculiar merits of the ideal of "loyalty," and to consider whether some other formula does not equally possess these merits, to which the critical objections do not apply. Now what I take to be the main point of value in the conception of loyalty is its recognition of the part which the objective world of reality plays in the ethical end. The nature of this advantage is twofold. In the first place, we need it in order to define and render determinate the nature of the self. The individualist is often tempted to regard the self as somehow given ready-made, and lying dormant in a form to mold the world directly to its pattern. And within limits, we do indeed find human possibilities settled beforehand by the facts of our organic equipment. But the limits are extremely elastic. At the start our potentialities are for the most part very vague; and what concretely we become is in a literal sense a creative achievement, taking on new and unanticipated forms according to the nature of the opportunities presented to us

⁷ P. 133.

by the real world in which we live. This, however, does not bear very closely on my present interest. I only stop to note that Professor Royce is somewhat arbitrary when he makes the environment no more than a *social* affair; this is doubtless of chief importance for ethical purposes, but it is plain, too, that our physical world also plays a not inconsiderable part in shaping what we are to be.

The other and more significant feature of Professor Royce's conception is its disinterested or outward-looking aspect. That the very possibility of the ethical life demands the recognition of something objectively good, objectively worth while, to which we can attach ourselves with sincerity and devotion, and that loyalty to this is, not indeed a statement of the end, but an indispensable accompaniment of our attitude toward the end, Professor Royce's discussion has abundantly shown. This gets expression in particular in the phrase "devotion to a cause," which in some interpretation I am ready to accept as a defensible statement of the ethical ideal. But the interpretation will involve a different emphasis from that of Professor Royce; and I should prefer to put it, therefore, in other terms.

Briefly, what I should undertake to defend as the simplest and most general formula is "absorption in an interesting and satisfying task." I could probably devise a more formal and pretentious phrase than this, but I do not know that it would better express my meaning. And it is intended to call attention to three things in particular. First, human good consists in activity, in *doing* something. Second, what this act shall be is determined by the concrete impulsive nature of the individual man; and its guarantee and reward is the satisfaction that accompanies the expression of impulse. And, finally, impulse carries as a part of its meaning the implication that our conscious attention has normally to be directed, not to the self, nor to the fact or feeling of satisfaction, but to the objective conditions which render the act possible, and to the outcome of the act as a creative accomplishment.

Of these characteristics, the first may be held to be involved also in Professor Royce's term "service," though whether in entire consistency or not with other sides of his philosophy might be made a question. The second is the point, in particular, on which Professor Royce and the professed individualist apparently part company, and it has already been sufficiently set forth in the preceding remarks. It is here that I find the first general advantage of the formula of "work" over that of "loyalty." "The best that you can get," writes Professor Royce, "lies in self-surrender, and in your personal assurance that the cause to which you surrender yourself is indeed good." "Work" also involves "self-surrender," in the sense that I am going on to consider, but not in the somewhat unintelligible

sense of self-sacrifice; rather, the "losing oneself in one's work" is the very meaning of self-realization, and so supplies its own ground of explanation. By the same token it explains, by its connection with the needs of self-expression, the "goodness" of the cause, and the reason for its selection in particular—things which Professor Royce has to take for granted, since they show no clear point of connection with his formula.

The third characteristic constitutes, on the other hand, the special point of community between the two principles of work and loyalty. But while both are equally "objective," there are reasons for holding that the former still is to be preferred. And first it has the preliminary advantage that it implies more directly the source of its own character of objectivity. *Why* should we sink personal ends in a cause, and allow *it*, rather than ourselves and our own satisfaction in it, to fill our minds? Professor Royce gives, I believe, no empirical ground for this; and indeed the more he interprets it as self-sacrifice, the less is a reason easily conceivable. There is to be sure a metaphysical explanation; if the sole reality is the "cause," of which I am but the localized expression, it is understandable that the part should be less significant than the whole. But the reason will appeal only to the one who starts with this particular metaphysics; and anyhow it fails to fit the case with entire neatness. It would explain why the individual always *did* subordinate himself to the social whole, if such had happened to be the fact; but it hardly accounts for our having to urge this upon him as a duty when, inexplicably, he tends to break loose from that subordination and assert his independence. But on an individualistic basis the thing is simple. Once grant that life is made up of active impulses endeavoring to express themselves in a determinate environment, and consciousness *has* to be outward-looking. The self-absorbed man will be the unsuccessful man. It is objective intelligence first of all that is called for; we need to give our best attention alike to the conditions to be mastered, or they will master us; and to the ultimate issue, or we shall lose our path. And for contemplation, also, as well as for the process of active effort, there are empirical reasons why the objective emphasis should still rule. Constituted as we are, we can get lasting satisfaction only as the results of our work are sources of admiration and contemplative approval; and for this we need to look beyond our own feelings, or our own admirable characters even. It is quite true that it is *my* satisfaction that lends to objects their flavor of desirability and *my* effort and achievement that constitutes work an end for me. It is true, also, that the normal man has now and again to envisage the personal side of his activity, dwell in his mind upon the work as *his*, and look forward to the

pleasurable things it will bring him, in order to keep motivation sufficiently vigorous and tense. But when the need for this becomes more than incidental, it argues something wrong with the machinery of impulse. Indeed it is a commonplace that the man who is always anticipating the pleasant results to come, instead of being absorbed in the interestingness of the task, is very apt to find himself disappointed. The stronger the impulse on which satisfaction depends, the less we have to coax this along by thoughts about ourselves and the relation of the work to *us*. This is indeed in part the explanation of the hedonistic paradox. The state of mind of the self-conscious "pleasure-seeker" comes to this: What, he asks himself, can I find to do in order to have as pleasant a time as possible? But the very fact that he takes such an attitude is proof that he is not in the best state for getting pleasure. If pleasure depends on wants seeking an outlet, then the more vigorous the wants, the greater the attendant satisfaction. But the man who wants something very much does not have to look about him with the mere desire for pleasure in his mind; the direction of his quest is already determined. He wants to go fishing or to read a book or to paint a picture; and the strength of the want is his guarantee that he will find the occupation satisfying. If on the contrary he has to sit down and ask himself, How can I spend the afternoon pleasantly? this means that there is nothing in particular that he wants very much to do. He is already rather bored; and it is not likely that in such a case he will get much satisfaction, no matter what he chooses.

And as an interest in doing things, in accomplishment, subordinates the emphasis which feeling has in our reflectively conscious lives, while yet it leaves to feeling an essential part to play, on much the same principles does it enable us to place the notion of "service" in the concept of the good. The peculiarity of the rôle of "feeling satisfaction," which leads to the paradox that while its presence is fundamental in the constitution of the good, it yet can not safely occupy the center of attention without endangering its own continuance, might be given a different statement in terms of a distinction between two phases of the ethical life. I mean the actual work of attaining our ends on the one hand, the process of active effort and accomplishment, and, on the other, the work of reflective judgment, in which these ends are estimated and reconstructed. The "gospel of work" has sometimes suffered from a failure to take due account of this second requirement. It is not all work that meets the test of goodness, but only that which satisfies the reflective judgment as constituting genuinely "our" true career. Ultimately indeed the needs of life are met by living, and not by passing ethical judgments about what we ought to do; and successful living means,

as I have said, absorption, not in ourselves and in our feelings, but in the task to be achieved. But to avoid mechanical and unintelligent action we have also continually to be passing the ends of conduct in review, and revising them to meet new situations; and then it becomes necessary to envisage more explicitly and consciously the *test* of a good life, in terms of the feelings of satisfaction which attach for us to some kinds of action, and not to others.

Now in a similar way the function of the ideal of "service" belongs primarily to the adjudging and reconstructive stage. It does not appear to me that normally it is any more healthy, while we are engaged in the active business of life, to be thinking about the benevolent, or self-sacrificing, or humanitarian character of our deeds, than to be thinking about their personal attractiveness to us—a judgment it would be hard to justify if it really were their serviceable nature, and not their appeal to our personal interest, which constituted the original source of their "goodness." The man who really does anything worth while for the world is the man who works primarily for the fun of it, and not he who flatters himself that he is "doing the world good." But in a secondary way, after a connection with personal interest is already presupposed, "service" may have a very great significance when we come to hunt for principles that shall help us guide our natural predispositions along lines capable of insuring lasting satisfaction. It does not by itself inform me what I am to do if I am told to "serve humanity," unless the advice can presuppose a prior interest in certain kinds of service for their own sake; apart from the motive that comes from such a personal appeal, I shall neither know what to go to work at in particular, nor am I likely to be effective enough in anything to count for much in the world's business. But in the very necessary task of inventorying my own interests and resources, in order to discover what it is for which really I am fitted, and in which I shall find the reward of satisfaction, it is exceedingly important that, on the negative side, I should not identify myself with a career too narrow and insignificant to satisfy my reflective judgments of worth, since here also lies one essential requirement of a contented life. This does not mean that my choice should be dictated by the abstract motive of a maximum of service; without a definite personal preference to go upon, no starting-point exists for calculation. It does not mean, even, that my primary motives in choosing need consider the value to mankind at all; the original justification of the preference is not its mere serviceable character, but the fact that I like doing it. I do not believe that the born artist or the born mathematician is called upon to reckon up the amount of—"good" he is going to do before he devotes himself to art or to science; this would hint rather at the

sentimentalism and romanticism of the dilettante. The man of real gifts is so sure that his product possesses independent worth—just because it is so satisfying to him—that he is inclined to be impatient when asked to prove its “social” value. But at the same time, the *possibility* of being “good for something,” though it does not create originally the persuasion of significance, is apparently needed if an intelligent being is to be able to justify his course to disinterested thoughts; and this will mean, with human nature constituted as it is, some measure at least of social usefulness. The man who feels an inner call to paint pictures would, I think, ordinarily be adjudged foolish if, on a purely abstract computation that the ministry contributes more per individual to the general happiness, he were to make himself a preacher instead. But if on scrutiny *some* advantage to his fellows were not discoverable in his choice, and all its benefits were to be absorbed by his own insignificant self, doubts could hardly fail to enter his mind about its wisdom, and that too from the standpoint of his own permanent satisfaction in it. Thus art sometimes takes directions whose triviality and lack of large human value compel a new insistence on art’s “social” function, until it is brought back to lines more capable of standing the test of reflective significance.

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REVIEWS AND ABSTRACTS OF LITERATURE

A History of Medieval Jewish Philosophy. ISAAC HUSIK. New York: The Macmillan Company. Pp. l + 462. 1916.

Dr. Husik’s book is the first attempt in the English language to present completely the history of medieval Jewish philosophy. It covers a period of six centuries, from the ninth to the fifteenth, which for the author mark the beginning and the end of systematic speculation among Jewish thinkers. An introduction of fifty pages is devoted to a study of the external influences which molded Jewish thought. There is an excellent exposé of Aristotle and a brief but thorough study of the Arabic schools.

Dr. Husik finds an Arabic prototype for every Jewish philosopher, even for Jehuda Halevi, the nationalist philosopher who rebelled against all foreign influence. He classifies the Jewish philosophers into Mutakallimun, Neo-Platonists, and Aristotelians, and upon the basis of this classification he unfolds before us the development of medieval Jewish thought. He starts with Israeli as the first Jewish philosopher—an honor usually attributed to Saadya—and ends with

Albo as the last Jewish scholastic, a thinker who, in the author's judgment, does not fully deserve the fame he has enjoyed. Dr. Husik finds in Crescas the cue even to what is considered Albo's most essential contributions, namely, the fundamental dogmas and the reduction of the thirteen articles of faith to three. Maimonides is given by Dr. Husik a lesser place than he is wont to occupy. Ibn Daud, who has been almost forgotten, is given by Dr. Husik a great deal of the credit usually accorded to Maimonides. The author thinks that "if not for Ibn Daud there would have been no Maimonides." He finds several flaws in Maimonides's system and shows that "Maimonides the rationalist often forgot his own ideal of reason and enlightenment."

The mystical philosophers and the exponents of the Kabala are purposely omitted. Dr. Husik limits himself to Jewish rationalism, probably because he thinks that the Kabala deserves no place in the history of philosophy. It is regrettable, however, that he did not indicate the relation of the Kabala to rationalism, and the rôle it played in Jewish life.

Numerous scientific notes, a list of biblical and talmudic quotations, an index and an extensive bibliography are appended to the book. The only work of importance omitted in the bibliography is Ahad Ha'am's essay on Maimonides, which presents Maimonides in a novel light. Those familiar with the scattered, obscure, and unintelligible material with which Dr. Husik had to cope, can best appreciate the value of his excellent work. He has transformed a literary chaos into a systematic presentation, accessible to the modern reader. His study of the texts is deep and thorough; and his clear, simple, and concise style stands in contrast with the obscure interpretations in German, which are often more unintelligible than the original.

The attempts at complete histories of Jewish philosophy have been so few that one can hardly find a basis for comparison. Dr. Husik's history differs from that of Neumark both in its scope and in its aim. Dr. Husik aims to present to us the past, without any reference to present-day thought; while Dr. Neumark seeks to construct a new system of Jewish philosophy, and reads the history of Jewish philosophy in the light of this system. Dr. Husik seems to be more interested in the similarity between Jewish thought and the outer environment, while Neumark—and in this he is the only one—seeks for the Jewish keynote. But he attunes it a great deal to Kantianism.

There is a closer connection between Dr. Husik's and Bernfeld's history of Jewish philosophy in Hebrew. But Dr. Husik's is more scientific and accurate in the renderings of the texts. Bernfeld has

the ensemble more at heart, but he overlooks essential details, and his references are not always traceable. Besides, he infuses into the Jewish philosophers his own view of a religious philosophy. Dr. Husik, on the other hand, has the merit of being impartial and objective. It is true that in the introduction he expounds his own theories of Jewish philosophy, but he makes no effort to incorporate them in the body of his book. Had he viewed history less objectively, he might have been led to overlook some important characteristics, which contradict to a certain extent some of the theories which he expounds.

The introduction carefully avoids the term "Jewish Philosophy," and uses instead paraphrases such as "the philosophical movement in Medieval Jewry," "the intellectual horizon of medieval Jewry," "the history of Jewish thought," or "medieval Jewish literature," *etc.* But the content of the book, the faithful portrayal of Halevi, Crescas, and others, do not tend to make us share the author's implied belief that Jewish philosophy has no individuality of its own. One is rather impressed by the overemphasis on the foreign elements. Because the Arabic thinker "Algazali too attacked the philosophers on their own ground and found his consolation in the asceticism and mysticism of the Sufis," does it necessarily follow that he was the prototype of Halevi? The similarity between the two is more an outward one. This is not the place to point out the essential differences, but Algazali's philosophy is based on a religious mysticism, while Halevi's is the expression of a poetical nationalism. It is not Algazali, but the inner yearnings of the nation, that were the source of inspiration to Jehuda Halevi, as well as to the other Jewish philosophers. But Dr. Husik assumes that throughout the period of his investigation the philosophical stimulus came from without, and that the system of Judaism was the same for all, without any individual variation. And yet the rational Judaism of Saadya is distinct from the spiritual Judaism of Bachya; the national and historical Judaism of Jehuda Halevi differs from the static Judaism of Maimonides; the emotional Judaism of Nachmanides from the impersonal Judaism of Gabirol and Ibn Ezra; the intellectual Judaism of Gersonides from the mechanical Judaism of Crescas. And those Jewish philosophers, such as Israeli, Gabirol, and Ibn Daud, who did not take a definite attitude towards Judaism, or did not distinguish themselves by some great Halachic work, were neglected and forgotten, even though they equaled in rank the foremost scholastics.

A classification of the Jewish philosophers, based on the inner life rather than on the process of intellectual assimilation, would have been a better tool for the construction of history. If instead of the usual various classifications, we were to group the Jewish

philosophers into, let us say, nationalists and assimilators, conservatives and radicals, we should immediately get a truer glimpse of the inner struggles which have characterized Jewish thought from the talmudic to the present time.

But the fallacy that there is no Jewish philosophy proper has become such a universal and crystallized axiom, that even as deep and original a scholar as Dr. Husik proceeded on this assumption. We can best account for this deep-rooted fallacy when we bear in mind that the study of Jewish philosophy started in the nineteenth century, at the time of the Jewish emancipation—a movement characterized by a desire for self-obliteration. This desire was carried back to history. The same impulse denied the national existence as well as its intellectual reflection in abstract thought. As a sequel to the belief that there are only Jewish individuals, but no Jewish people, came the belief that there were only individual Jewish philosophers, but no Jewish philosophy. This view also explains the fact, which is otherwise inexplicable, that although a number of monographs have been written on individual Jewish philosophers, there are very few complete historical presentations. The first history of Jewish philosophy, that of Bernfeld, 1897, appeared with the rise of the nationalistic movement. This was not a mere coincidence, but an organic outgrowth, and it is regrettable that the historians did not convert this significant fact into a useful tool. For Jewish philosophy can not be separated from Jewish history and literature.

Dr. Husik was more interested in the logical and technical aspect of the subject. Not that he did not fathom the other aspect or that he lacked penetration, but he assigned himself certain limits beyond which he did not care to go. And in his self-imposed task, he has been most successful. His history will serve as an excellent textbook both for the layman and for the scholar. Its objective character makes it most valuable to all, independently of one's philosophy of the history of philosophy.

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JOURNALS AND NEW BOOKS

THE PHILOSOPHICAL REVIEW. May, 1917. *The Relation of Coherence to Immediacy and Specific Purpose* (pp. 259-273): BERNARD BOSANQUET. — A reply to Professor Sabine's article, "Professor Bosanquet's Logic and the Concrete Universal." Explains the kind of evidence on which the primacy of coherence rests, defends the coherence theory against objections from the side of realism and pragmatism, and further expounds the theory from the

standpoints of a timeless reality and selective attention. *The Knowledge of Other Minds and the Problem of Meaning and Value* (pp. 274-296) : WILBUR M. URBAN. — Discusses the two views of our knowledge of other minds, the intuitive and the inferential. A discussion of each view leads to the use of such terms as "intentions," "meanings," "values." What is needed is a more precise definition and analysis of the more ultimate problem of meaning and value, for this is involved in the problem of the knowledge of other minds. *The Mental and the Physical as a Problem for Philosophy* (pp. 297-314) : R. F. ALFRED HOERNLÉ. — The retention of the distinction between the mental and physical depends on the correct placing of these terms in the context in which they are displayed. If placed in the context of physics or psychology, it lies beyond the domain of philosophy. If placed within the context of philosophy, viz., epistemology and metaphysics, it is asserted that there is no ground for treating the mental and physical as exhausting between them the contents of the universe. *Discussion* (pp. 315-338) : *Progress in Philosophical Inquiry and Mr. Lovejoy's Presidential Address*. A series of articles critically interpretative of Professor Lovejoy's address by Professors Albee, Bakewell, de Laguna, Hocking, and Hollands. *Notices of New Books. Summaries of Articles. Notes.*

BRITISH JOURNAL OF PSYCHOLOGY, June, 1917. *On the Differentiation of the Human from the Anthropoid Mind* (pp. 395-422). — Heredity, adaptation, accommodation, original stock and the conditions of differentiation, primal society, psychology of the hunting pack, some consequences of the hunting life, language, customs, property, benevolence, war and the influence of imaginary environment are among the topics discussed concerning the differentiation of the human from the anthropoid mind. *On the Feelings and their Neural Correlate, with an Examination of the Nature of Pain* (pp. 423-476) : A. WOHLGEMUTH. — The logical fallacy expressed or implied in many psychological systems is shown and its bearing on the question of the neural correlate of feeling examined. *Freudian Mechanisms as Factors in Moral Development* (pp. 477-509) : J. C. FLÜGEL. — Psychology of Freud is destined to cast a greater light than any other contemporary system upon the problems connected with the development and evolution of the human mind. Freud may be revealed the true successor of Darwin and Spencer. *The Experimental Study of Binocular Color Mixture: I* (pp. 510-551) : SHEPHERD DAWSON. — An historical summary of methods and a description of some experiments on binocular color mixture are given. A bibliography is appended. *Publications received and reviewed*: Six French and Spanish publications, *Psychologie de l'Enfant Péda-*

gogie Experimentale: ED. CLAPARÈDE; *The Relation of General Intelligence to Certain Mental and Physical Traits*: CYRUS D. MEAD; *Completion-Test Language Scales*: MARION REX TRABUE; *Measurements of Some Achievements in Arithmetic*: CLIFFORD WOODY; *Adjustment of School Organization to Various Population Groups*: ROBERT A. F. McDONALD; *The Freudian Wish and its Place in Ethics*: EDWIN B. HOLT. Proceedings of the British Psychological Society.

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DeVrijer, M. J. A. Henricus Regius: Een "Cartesiaansch" Hoogleeraar aan de Utrechtsche Hoogeschool. 's-Gravenhage: Martinus Nijhoff. 1917. Pp. xxii + 221. 3 Gld.

Gemelli, A. Sull'applicazione dei metodi psico-fisici all'esame dei candidati all'Aviazione Militare. Bologna: Stabilimenti Poligrafici Riuniti. 1917. Pp. 38.

Laird, John. Problems of the Self: An Essay Based on the Shaw Lectures Given in the University of Edinburgh, March, 1914. London: Macmillan and Company. 1917. Pp. xii + 375. \$3.00.

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NOTES AND NEWS

A meeting of the Aristotelian Society was held on November 5, Dr. H. Wildon Carr, President, in the chair.

The President delivered the Inaugural Address on the subject "The Interaction of Mind and Body." After a brief allusion to the progress made during the last two or three decades in the clinical knowledge of mind and body, and particularly to the amount of material for study furnished daily by the injuries of war, he passed to the consideration whether anything in our new knowledge throws light on the old philosophical problem. He rejected as inconceivable the notion that psychical and physical action can be comprised within one energetical system, or that there can be direct equivalence of exchange between the two orders. The alternative of parallelism, apart from its incredibility on the ground of extravagance, is in direct conflict with the facts of individual experience. The important fact in regard to the nature of mind and body

is that each is the unity and continuity of an organic individuality and that every modification of either is a modification of the whole. Interaction must, therefore, it was argued, be interaction between the whole mind as an individual unity of personal experience and the whole body as a living unity of coordinated mechanisms. Such interaction is not causal in the sense the term is used in physical science. It is the mutual adaptation of two individual systems distinct in their order, diverse in their function, and divergent in their principle, both of which are necessary and complementary to the common end for which they cooperate, living action. The term which best expresses their interaction is solidarity in its old legal meaning, which denoted the unity of common purpose, the diverse obligations, and the corresponding claims on the members, of a partnership. The philosophical theory sought further to deduce the principle of a dichotomy of living experience into two divergent but complementary systems, mind and body, from the nature of living action.

The New York Branch of the American Psychological Association met in conjunction with the Section of Anthropology and Psychology of the New York Academy of Sciences on November 26. The following papers were read: "Psychological Examinations of College Freshmen," Miss Edith Carothers; "Distribution of Time in Learning Vocabularies," Professor Robert A. Cummins; "When does the Baby begin to Think?" Dr. G. C. Myers; "A New Clinical Test for the Temperature Sense," Miss E. L. Cornell; "A Psychological Test of Expertness in Marksmanship," Dr. A. I. Gates.

THE Herbert Spencer Lecture for 1917 was delivered by Professor Emile Boutroux, member of the "Institut" and the French Academy, and Doctor of Letters of the University of Oxford, on October 20, in the Oxford University Museum. The subject of the lecture was "The Relation between Thought and Action from the German and from the Classical Points of View." The lecture was delivered in English.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

CONCERNING ALLEGED IMMEDIATE KNOWLEDGE OF MIND

IN his suggestive book entitled *The Problem of Conduct*, Professor Taylor discusses mistakes as to one's own motives. He says, "It is a commonplace of ethics that the human heart is so utterly deceitful that we are constantly being deluded not only as to the motives of our fellows, but even as to our own. What more common, for instance, than the discovery that an action we believed ourselves to have performed from motives of magnanimity was really prompted by a desire to make ourselves a reputation?" In such cases "we have at first sight a puzzling psychological problem. . . . Surely, it may be argued, there can be no such thing as an unconscious motive; an emotion is, from the very nature of the case, just what it is at the time felt to be, nothing more and nothing less." In short, accepting the idea that motives are states of consciousness or feelings which are just what they are as states of consciousness, how is error possible as to what they are?

Professor Taylor imagines a case in which the influence of an emotion prompts a person to confer a benefit upon a fellow at some cost to himself, which he takes for an act of generosity. Later on, the same person finds himself *not* strongly prompted to perform a similar act under circumstances such that there is no chance for the beneficence being known. If the man is frank with himself, he will admit that his motive on the first occasion was not the feeling of pure generosity which he had supposed it to be. But how was error possible, the emotion being "just what it was felt as being; an unfelt emotion being a *contradictio in adjecto*"? The solution is that the "mistake came not in estimating the emotion, but in apprehending the circumstances necessary for its production."¹

Students of ethical theory ought to be grateful to Professor Taylor for raising so definitely a question usually slurred over. I think his proposed solution makes the best of a bad job if one accepts his psychological premises, which are not so much his as the

¹ See Taylor, *Problem of Conduct*, pp. 98-99.

truisms of an introspective psychology; for ethical theory as to the nature of motives has been profoundly affected—in common with most other branches of ethical theorizing—by the terminology and notions of introspectionist psychology with its assumption of ideas, feelings, as just states of consciousness, whose nature is identical with their happening. We all recognize that meaning or nature is not all one with occurrence in the case of physical happenings, that it is something to be searched out with exceeding pains, utilizing all the knowledge we command. No one expects that the nature of infantile paralysis or of fire or gold will be open to the most careful *direct* inspection. One has, however, only to read Descartes to see that at the same time when this notion was first gaining ground as to physical existences, it was insisted that mental events, especially facts of something called consciousness, carry their whole character in their bare face or presence, so that about them immediate certainty remains not only possible, but inevitable. Clearly Mr. Taylor's difficulty is due to a translation of this doctrine into the ethical doctrine of motives. That motives are feelings (emotions, sentiments) and that feelings are of such a sort that they are known to be just as and what they are in their occurrence is of the essence of this translation.

Does not the conflict of this ethical rendering with the fact of difficulty in ascertaining one's own motive give good ground for questioning the psychological assumption on which it rests? Is Professor Taylor's solution successful? Just what does it imply? Its apparent implication is that we were not wrong in thinking we were animated by a motive or feeling of generosity. Our mistake was only in supposing that this emotion would be aroused by certain conditions, those of distress of another, when as matter of fact it is aroused by distress plus opportunity for the act to secure the attention of others. This, I say, is the apparent implication. For otherwise the feeling was not one of generosity at all, but only of love of notice or of praise. Then there was a mistake about the feeling itself—which is said to be a contradiction in terms.

But in escaping one difficulty is not a greater one raised? Can the feeling be said to be generosity when it can be excited only if the act it prompts is an object of favorable regard on the part of others? Is not this the most extreme ethical subjectivism, equaled, if equaled at all in history, only by the doctrine ascribed to Protagoras in the Platonic *Theætetus*? Is it not the same as saying that if a man "feels" that his motive in committing what others would describe as an act of malicious revenge is one of lofty justice, all debate is closed? Such was his motive. The other alternative is

that the "feeling as barely felt" has *no* character or nature; that to conceive it *as* generosity (or *as* love of praise) is identical with referring it to conditions of production and to the consequences which follow from it, a reference which is as difficult and as exposed to error as in the case of physical events.

I am questioning in short whether the distinction upon which Mr. Taylor relies, between "estimating an emotion" and "apprehending the circumstances necessary for its origin," is anything more than verbal. I do not see how any emotion can be estimated *except* in terms of its objective conditions or its objective consequences, preferably both. Is not to "feel" a feeling *as* generosity or greed or fear or anger all one with ascribing to it certain conditions of origin and of outcome? Before we raise the question as to whether I can be wrong about my own attitude, we must then consider the question as to whether we can be *either* right or wrong about it unless we view it in connection with the circumstances which evoke it and the consequences which flow from it.

For my own part, then, I can see no meaning in "estimating" an attitude of my own to be anger excepting that it is an attitude produced by an insult or an unexpected injury, and which leads, if unchecked, to certain violently destructive acts. (This, of course, is a very gross identification, quite too gross to be of scientific value, and is used only for purposes of illustration.) Unless this position can be successfully denied, there is a dangerous ambiguity in saying "an emotion is from the very nature of the case what it is at the time felt to be." It may mean the tautology that the *event* is just what it is, irrespective of whether or not we know or characterize it. Then it stands on exactly the level as any natural occurrence of which no notice is taken. Or it may mean that as matter of fact we take it—judge it, class it—to be such and such, whether it *is* so or not, just exactly as we take a certain moving twig to be a snake in spite of the fact that it *is* a twig. Only by compounding into one these two different facts—both facts, but different facts—does, I am persuaded, the notion arise that there states of consciousness or feelings exist which wear their hearts on their sleeves, so much so that the sleeve is the heart, and *vice versa*.

In other words, we come to exactly the position taken by Dr. Singer in criticizing a current assumption. "Did we start with an immediate fact of consciousness and construct a world? Then let us now begin with the world and construct a fact of consciousness." And again, "It takes all the science in the world to make out whether *A* is in love or whether *B* sees red."² And the context makes it clear that this holds even when *A* or *B* is one's self.

² This JOURNAL, Vol. IX., pp. 16, 17.

One has, of course, only to extend this line of reasoning to be in the middle of the discussion of introspectionist *versus* behaviorist psychology. Says Watson, "One must believe that two hundred years from now, unless the introspection method is discarded, psychology will be still divided on the question as to whether auditory sensations have the quality of 'extension,' whether intensity is an attribute which can be applied to color, whether there is a difference in 'texture' between image and sensation; and upon many hundreds of others of like character."³ And why not, if the meaning which any one of these questions may have is really a matter of the *connection* of one event with certain other events, events which either constitute the circumstances of its production or which are its results? To decide upon these connections is a matter of observation, but of observation of exactly the same sort as is used in arriving at a conclusion as to the nature of, say, typhoid fever, an observation which, instead of staring at what is directly present with the hope that the stare, if sufficiently intent, will disembowel the object, uses all the resources of what is already known about other things to uncover a specific connection between events. I am quite sure that some of the objections to behaviorism, at least in its general sense, would disappear if it were recognized by its critics that behavior is not an isolated thing—a muscle twitching—but concerns the connection of an organic event with circumstances necessary to its production and with other events which follow from it. It would then be clear, I think, that we do not first have a certain feeling or state of mind or consciousness complete in itself, generosity, fear, anger, or whatever, but that there is a certain (instinctive) reactive attitude which *when viewed* in its connections, in its relation to the situation in which it occurs and the specific consequences which flow from it, may be called emotion or sentiment or feeling of, say, generosity. I have employed the word "viewed" which might be thought to imply "consciousness," and I have admitted that a certain complex reference of an attitude to other things may properly be called a feeling or sentiment. This probably appears like a surrender of behaviorism. But I would point out that nothing more is here involved than is stated by Watson when he says: "The separate observation of 'states of consciousness' is, on this assumption, no more a part of the task of the psychologist than of the physicist. We might call this the return to a non-reflective and naïve use of consciousness. In this sense consciousness may be said to be the instrument or tool with which all scientists work."⁴ That is to

³ *Behavior*, p. 8.

⁴ *Ibid.*, p. 27.

say, I am merely assuming that an *observation* takes place, and that its aim is to *understand*. When (or if) the psychologist wishes to observe and understand observation and understanding, he must take for his object a certain event studied in its context of other events—its specific stimulus and specific consequences. It may well be true that at present there are no methods by which one can determine at what points in the animal scale observation (in the sense defined) and understanding take place,⁵ but the query as to their first manifestation would not be an inherently impossible, a meaningless one. "One can assume either the presence or absence of consciousness anywhere in the phylogenetic scale without affecting the problems of behavior one jot or one tittle." This is certainly true if we start with the introspectionist's conception of "consciousness." But if we start with observation and understanding as they are *used* in daily life and by the scientist, then of course the case stands differently. The problem is when and where a specific or differential type of behavior presents itself.

Now I take it that the observations of daily life differ from those of the laboratory chiefly in the coarseness or grossness of the former, due to lack of control of detailed conditions. This is not a reason for discarding the former; it is an argument for making them, as rapidly as possible, more refined and accurate. But men would never have arrived at a minute anatomy of man or of the nervous system if they had not started from the gross observation of these things. In fact, the objects of gross observation always persist as limiting conditions which give point and meaning to specific determinations. Just so I think the coarser observations of the non-laboratory psychologist about, say, observation and understanding as they display themselves in human life, may set very important problems to future experimentalists, suggest hypotheses and even determine the limits within which experiments may be fruitfully carried on. To be more specific, I take the recent discussion of "consciousness" by Bode.⁶ I am not concerned about names. It makes little difference if such a discussion be called philosophy and the name psychology be reserved for laboratory findings. (I use the word "laboratory" loosely to mean all findings under conditions of great artificial control.) But it makes a good deal of difference whether the inquiry is intellectually legitimate, that is, whether it deals with genuine subject-matter. It may make a real scientific difference, in other words, whether the things called observation and understanding are identifiable with a type of behavior which con-

⁵ Watson, *Ibid.*, p. 4.

⁶ In the volume entitled *Creative Intelligence*.

trasts with merely impulsive and routine human behavior in that future things, things not yet having happened, operate as part of the stimulus in a present response: Bode's hypothesis roughly stated. For in time this identification may define the limits of an inquiry into behavior carried on under conditions of refined control. Meantime, the coarser observations into human conduct may serve to keep alive the sense that the naïve sense of "consciousness," that in which it is a tool of layman, physicist, and psychologist alike, is itself capable of being understood from a behavioristic point of view. And this also is a matter of scientific import. For it protects experimental behaviorists from a charge of wilfully denying the existence of certain facts (facts like those of observation and understanding as used by all scientific men) merely because their technique is not yet developed to the point of dealing with them. To recognize that the behavioristic principle can make a place for them is important. For science is, after all, carried on by men, and a seeming denial that such facts do exist and do come under the behavioristic principle is sure to keep alive in the minds of some a futile introspectionist method, by setting to one side a realm of facts to which (so it is thought) it *must* be applied since the behavioristic method confessedly does not apply.

However, this may not seem to justify the use of the words "feeling" and "sentiment," or the recognition of any distinctively *conscious* attitude. This may appear like a relapse into the "state of consciousness," psychology proving that one's behaviorism is hardly, after all, skin deep. So I conclude with pointing out in what sense such a term as sentiment may be applied to a specific type of angry behavior. Obviously *not* in the sense in which Taylor—in common with the usual tradition—uses the word, to indicate something which is, *per se* in its original self-enclosure, generosity or anger or whatever. In their *first* sense, such terms must denote strictly a way of reacting to particular stimuli, not anything which may be called a "feeling." But suppose that one of these behavioristic attitudes is connected with what precedes and issues from it in the way of behavior. Then a new fact may come into existence, or the old fact gain a new quality. To tell a child who is quite innocent of any feeling or sentiment, who is merely grabbing for something to put in his mouth, that he is selfish or greedy is to requalify a mode of response in this way. It is a way of telling him that he is *going* to act in a certain way and that his action when complete is *going* to call out a certain unfavorable attitude on the part of others. Now suppose the child carries over this way of observing and understanding his immediate attitude into his own attitude—

that is to say, next time as soon as he begins to react in this way he also acts to observe his act in its context of origin and consequence. Now this supervening of a new attitude toward a more primary attitude may constitute the old attitude into a motive or spring of action which in current terminology is an impulse or sentiment or feeling.

My suggestions or theses are, then, threefold. Negatively, there is no more reason for supposing that personal events have a nature or meaning which is one with their happening, and hence open to immediate infallible inspection, than is the case with impersonal events. In each case the event only sets a problem to knowledge, namely, the discovery of its connections. Secondly, it is desirable and possible that we should observe and understand observation and understanding and allied phenomena themselves. Such a study would be a study of "consciousness" in the naïve sense mentioned. Thirdly, such a study, with a recognition of "consciousness" in this sense, is quite compatible with a behavioristic standpoint, whether or no the technique exists at a given time for its successful accomplishment.

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THE EPISTEMOLOGICAL SIGNIFICANCE OF SOCIAL PSYCHOLOGY

PERHAPS it is still too early to speak of the "science of social psychology;" certainly it is if one is to accept the natural scientist's views—that science consists in quantitative measurement and the manipulation of numerical data. Yet it is becoming increasingly clear that there is a place in our intellectual scheme of things for the study of the specific content of the minds of specific groups of people and the investigation of the particular features of the social environment of those groups to which their mental content is attributable. Furthermore, there is more than a suspicion that this study—whether it is to go by the name of social psychology or not—has many of the characteristics of epistemology. For it is essentially a study of the sources and limits of knowledge.

Obviously no one can dogmatize at this date about what the social psychology of the future is to be. Some future historical accident may associate the name, "social psychology," with any one of a number of special investigations within the general field of the social sciences. Among the men who have consciously entered the province of social psychology there are at least three important currents of thought. There is the psychological sociology which

has resulted from the efforts of men like Tarde and Ward, and their modern successors, to make sociology psychological. Then there is the social psychology with which the psychologists have provided us through their efforts to bring the sociologists' work psychologically up to date. And, finally, there is the still more recent work of the men, for the most part neither psychologists nor sociologists, who consider the human mind to be a distinctly social product, developed in each individual by his environment and not biologically "given" except in the most rudimentary form.

Social psychology was called into being by the development of sociology in the last quarter of the last century. Not only did the Spencerian analogy between society and the individual organism demand for its completion the development of the analogy between the individual psychosis and social organization; indeed, the whole range of phenomena with which the sociologists were dealing was reducible to the actions and reactions of conscious individuals. It is perfectly natural that sociology should have taken from psychology whatever principles of explanation it needed and should have worked them over to suit that need. The social psychology which resulted from this process is obviously "psycho-sociology," or "psychological sociology."¹ The significance of the difference in name lies in the extent to which this type of social psychology takes after its sociological parent. The business of social psychology, according to this theory, is the explanation of those psychological phenomena which are social rather than individual. It is to study "the psychical planes and currents that come into existence among men in consequence of their association,"² or to state "the bearings of modern psychological theories upon the problems of social organization and evaluation."³

If it was perfectly natural for sociologists to adapt from psychology the principles for the explanation of social organization and movement, it was quite as inevitable that the psychological sociology which resulted should fail to meet the approval of the psychologists. The psychology of the sociologist appears to the progressive psychologist to be so archaic, and it seems to have been so completely distorted from its original form by its "application" to the explanation of social phenomena, that he feels himself compelled to interfere, and to reshape social psychology to true it up with accepted psychological doctrine. But although this psychological reaction does result in the correction of the bad psychology of the sociologist,

¹ As Ellwood says he would prefer to call it. Cf. C. A. Ellwood, *Introduction to Social Psychology*, p. v.

² E. A. Ross, *Social Psychology*, p. 1.

³ C. A. Ellwood, *Introduction to Social Psychology*, p. v.

as Professor Dewey has very clearly indicated,⁴ yet instead of freeing social psychology and allowing it to go its own way, it has the effect of tying it to the apron string of psychology. For this variety of social psychology is only a "chip off the old block" of psychology proper. It is composed of a selected assortment of psychological doctrines put up by the psychologist "to provide students of the social sciences with the minimum of psychological doctrine that is an indispensable part of the equipment for work in any of these sciences."⁵

Now, a little reflection must convince any one that it has always been the business of psychology proper to describe the human machine. It is the only science which attempts this task. Other sciences describe the nature of specific parts of the mechanism—the individual cell, the bony structure, the nervous system—but to psychology alone is it given to put all the parts together, and describe the machine as it actually operates in every situation, that is, as an individual, as a whole. While every movement of the machine is the action of a whole individual adapting itself to a situation, the psychologist takes careful note of the fact that the human machine is capable of an enormous variety of different adaptations. The "principles" of psychology are classifications—for purposes of exposition and consequent control—of the various types of adaptations of which the machine is capable.

Yet except for purposes of exposition there is no such thing as *the individual*; there are only *particular* individuals, each with an identification tag attached, and with a full complement of predispositions, prejudices, and more or less fixed ideas which distinguish him from every other individual. There is no such thing as the emotive or the cognitive process; there are only specific individuals responding emotionally to specific situations to which they have somehow come to make each his own type and degree of emotional response, or specific individuals thinking each according to his own light about the things which have somehow been presented for their thoughtful consideration.

It is easy to generalize from this that there is a big difference between describing how the individual (that is, a "psychological entity") acts and why, and describing how certain individuals (for instance, German junkers or American syndicalists) act and why. The (psychological) individual acts as he does (that is, instinctively, cognitively, *etc.*) because he has been made so by nature, and it is the business of psychology to describe his acts and to relate that

⁴ In an address before the Am. Psych. Ass'n., December, 1916. Published in the *Psychological Review*, July, 1917.

⁵ Wm. McDougall, *Social Psychology*, p. v.

description to an account of his physical constitution. The German junker acts as he does (that is, as his actual conduct is recorded by historian and newspaper correspondent) because he has been made so by society, and it is the business of social psychology, or the same science by some other name, to describe his acts and to relate that description to an account of his social environment.

All this has been made perfectly obvious by the work of the writers who have discussed social psychology from the point of view of physiological and behavioristic psychology. For just in proportion as social psychology treated from that angle becomes a study of the instincts and emotions which compose the mechanical equipment with which each individual enters society and begins participating in "social interaction," to just that extent it becomes perfectly clear that "since mind does not appear in the original list of instincts, it represents something acquired. . . . The net outcome of the newer type of psychological method is thus an unexpected confirmation of the insight of Tarde that what we call 'mind' means essentially the working of certain beliefs and desires; and that these in the concrete—in the only sense in which mind may be said to *exist*—are functions of associated behavior, varying with the structure and operation of social groups. . . . A certain kind of associated or joint life when brought into being has an unexpected by-product—the formation of those peculiar acquired dispositions, sets, attitudes, which are termed mind."⁶

This conception of mind is coming into general acceptance at the present time, and there are many indications that this third conception of social psychology, as distinguished from psychology proper, is to become as general as the differentiation between the contribution of the psychological mechanism and that of the social environment to the formation of human character.

There is a genuine danger, however—due to the heat of the controversy over the field and methods of social psychology—that students will continue the discussion of the function and limits of their science beyond the point of diminishing returns, instead of applying themselves at once to the task of working that field. Obviously the reiteration of the dogma that the individual mind is a social product interpretable only in terms of the social environment is not a substitute for the active study of the relations between "specific dispositions, sets, and attitudes," and the structural changes which society has been undergoing. Thus, to return to the figure used earlier, we are agreed that it will not do to say that the German junker is a creature of great imitative propensities, or that he is

⁶ John Dewey, "The Need for Social Psychology," *Psychological Review*, July, 1917, pp. 271, 272.

under the sway of a gregarious instinct. These are the words of the psychologist, applicable to the human machine in general, and, therefore, meaningless as an explanation of particular acts of specific individuals. But it is just as meaningless to suggest, as the explanation of the conduct of this class of people, that every individual is a creature of society and that all of his acts are social acts explicable only in terms of the social environment in which that individual has lived. Any real analysis of this group of phenomena must search out the dispositions, attitudes, prejudices, and so on, which are peculiar to the members of this class, and must then relate them to the peculiarities of the social background of the class.

This work of tracing the specific predispositions and prejudices of particular groups of people back to their social sources is certainly no new thing. If the social psychologist makes this his task he may be sure that no one can possibly accuse him of having created his own job. For if this is social psychology, then social psychology is as old as the race. Like sociology, it is very young and very immature as a science; but like sociology it is a science which is attempting to make a conscious and systematic study of a group of problems which has exercised a certain fascination over the more reflective members of all civilized communities. Consider, for example, the insight into social psychology which Plato exhibited in his provisions for the selection and education of the guardians of his ideal state. The following quotation from Book III. of the *Republic* shows pretty clearly not only that he saw that the mind is a social product, but that he went further and examined some of the relations between specific types of environment and specific types of character.

"And not only the education (of the guardians), but their habitations, and all that belongs to them, should be such as will neither impair their virtue as guardians, nor tempt them to prey upon the other citizens. Any man of sense must acknowledge that.

"He must.

"Then now let us consider what will be their way of life, if they are to realize our idea of them. In the first place, none of them should have any property of his own beyond what is absolutely necessary; neither should they have a private house or store, closed against any one who has a mind to enter. . . . And they alone of all the citizens may not touch or handle silver or gold, or be under the same roof with them, or wear them, or drink from them. And this will be their salvation, and they will be the saviors of the State. But should they ever acquire homes or lands or moneys of their own, they will become housekeepers and husbandmen instead of guardians, enemies and tyrants instead of the allies of the other

citizens; hating and being hated, plotting and being plotted against; and they will pass their whole life in much greater terror of internal than of external enemies; and the hour of ruin, both to themselves and to the rest of the State, will be at hand."

In quoting this passage one really ought to italicize Socrates's remark: "Any man of sense must acknowledge that." For it is a matter of common observation that every sensible person interprets the differences between the ideas and habits of his acquaintances as differences assignable in large part to the variety of environments in which they have lived. Indeed, all drama and all fiction, in so far as it deals with social types, is a form of social psychology.

But literature, like the occasional adventures in social psychology made by every sensible man in the course of every-day existence, is highly unsystematic and unscientific. The scientific social psychologist will be able to appropriate much less from such sources than from history, political science, and political economy. For the students of those sciences have collected a wealth of material bearing directly upon the relation of changes in social status and technique upon changes in the whole mental background of political and economic groups. Probably the work of the economist, Thorstein Veblen, is the weightiest contribution which has yet been made to the science of social psychology—as it is here defined. Not only might every one of his five books be classified as the systematic study of the social psychology beneath a selected group of social arrangements, but it will be some time before better social psychology is written than his discussion of "the cultural incidence of the machine process" in *The Theory of Business Enterprise*, or his analysis of the nature and the sources of the spirit of belligerent patriotism which is both the cause and the result of the perpetuation of war, in *The Nature of Peace*.

It is to work such as that of Veblen, therefore, that one must turn if one wishes to note the characteristics of social psychology as it is going to be written in the future. For whatever the merits of that work may be, it represents an actual essay in the field which social psychologists are coming to recognize as their own, but which they themselves have not yet begun to work.

An examination of this actual and accomplished social psychology reveals the fact that the great problems of society center about the major contradictions in the currents of thought and prejudice which are diffused through the minds of different groups and classes of people. The great crises of history seem to be the points at which contradictory lines of influence, which have spread from incompatible phases of the social order to the different economic

and political classes, have come into sharp conflict. Out of such conflict between groups whose whole way of thinking is antagonistic there come changes in the status of one group with respect to the others, or in the technique of production or of social observance, that alter the entire mental background of the members of those groups.

Take, as the most beautiful example available, the conflict between bourgeois satisfaction with the existing order of economic arrangements and the growing proletarian impatience with the whole system of private property and the private appropriation of interest and rent. "The question of equity or inequity in the distribution of wealth, presumes the validity of ownership rights on some basis or other, or at least it presumes the validity of some basis on which the claims of ownership may be discussed. Ownership is the major premise of any argument as to the equity of distribution, and it is this major premise that is being forgotten by the classes among whom socialistic sentiment is gaining. Equity in this connection seems not to belong in the repertory of socialist concepts. It is at this point—the point of a common ground of argument—that the discrepancy occurs which stands in the way, not only of an eventual agreement between the socialists and their conservative critics, but even of their meeting one another's reasoning with substantial effect. In the equipment of common-sense ideas on the basis of which the conservatives reason on this matter, there is included the conventional article of ownership as a prime fact; in the common-sense basis of socialistic thinking this conventional premise has no secure place. There is, therefore, a discrepancy in respect of the metaphysics underlying the knowledge and reasoning of the two parties to the controversy, and the outlook for a common understanding is accordingly vain. No substantial agreement upon a point of knowledge or conviction is possible between persons who proceed from disparate preconceptions."

Now the contribution of the social psychologist—in this case, Professor Veblen—to the resolution of this controversy is the analysis of the social background of the conflicting groups for the causes of those "disparate preconceptions" which are the "common-sense basis" of the antagonistic convictions of the two parties. For we can never claim to control the reconstruction of our social arrangements until we understand something of the social nature of the main currents of thought and feeling which are the dynamic factors that are forcing reconstruction. That is to say, the function of social psychology (or of this type of social psychology under some other appellation) is to discover in the social environment of a given group

⁷ Veblen, *Theory of Business Enterprise*, pp. 343, 344.

or individual the causes and the limitation of "the peculiar acquired dispositions, sets, and attitudes" which taken together constitute that group or individual.

But this is the investigation of the sources and limits of knowledge—that is to say, it is epistemology. Of course the old epistemology has always had a metaphysical setting which social psychology completely lacks. For epistemology arises from the common feeling of reflective men of all periods that it is necessary (originally for religious reasons) to establish for our conception of the nature of the universe a higher degree of ultimacy than the naïve acceptance which the man-in-the-street accords the world in which he seems to live and move. The epistemological examination of the sources and limits of knowledge is motivated, therefore, by the desire to establish religious faith upon the sure ground of a world the reality of which is ultimately certain and not merely assumed for practical purposes. Upon its negative side epistemology has culminated in the establishment of the utter futility of attributing to the world of our thought and action any further reality than that of a world of human conception. Upon its positive side, therefore, epistemology has resulted in the Hegelian metaphysics, which attempts to transcend the limits of a reality relative to man by identifying mind—which seems somehow given—with the ultimate reality.

For two reasons this transcendental epistemology is making much less appeal at present than for some time past. In the first place, its negative results may establish the relativity to man of the world of common conception; yet as Kant clearly demonstrated, they do not in any way invalidate the claims of the mind to understand the world in which we seem to live. This has led men of a realistic turn of mind to adopt once more the naïve philosophy of the man-in-the-street and to assume the ultimate reality of the world of thought and action.⁸ At the same time the complete failure of the positive side of epistemology to establish the ultimate validity of our knowledge of the phenomena, which men have desired (for religious reasons) to raise to the plane of ultimate reality has led other men to conclude that since the valuable things of life are all on the plane of reality in which the world of action lies it is idle to inquire whether our knowledge of that world has ultimate validity or not.⁹

To this sort of epistemology—the epistemology which inquires whether human knowledge may properly be said to have a validity which transcends the limits of the world of human action—social

⁸ Cf. W. T. Marvin, "The Emancipation of Metaphysics from Epistemology," Pt. II., in *The New Realism*.

⁹ Cf. John Dewey, "The Need for a Recovery of Philosophy," Pt. V., in *Creative Intelligence*.

psychology has nothing to contribute. But this is not the only sense in which knowledge may be said to be limited. Whether there is such a thing as a higher plane of validity and reality than that of common sense or not it is clear that there are very great divergences of validity between the conceptions of the world held by different men. It is further clear that "knowledge in general"—that is, mental content, wherever it is found—is relative not only to the finitude of man, but also to the particularity of each individual man. There is, therefore, another epistemological problem, and a much more vital one for every practical purpose than the problem of transcendental epistemology. It is the problem: Whence comes the mental content of every man's mind, and what are the limitations that are imposed upon that mental content by its sources? The solution of this problem lies along the path of the investigation of the social sources of all mental content and of the limitations which are imposed upon the human mind by the fact that it is always the product of some particular environment and so must always receive an environmental bias. This investigation is the business of social psychology.

Of course the metaphysician who has not made a special study of social phenomena, and who therefore does not realize the extent to which the whole of a man's thinking—even upon relatively abstract problems—expresses the bent which is given to his mind by its social background, is likely to feel that to call social psychology epistemology is to fall victim to a rather shallow analogy. "For after all," he would say, "social psychology deals only with the most general and most immediate reactions of one group or individual to another. The social psychologist can hardly suppose even in his most sanguine moments that abstract thinking of the scientific sort can be brought within the canons of social psychology." But such a man would be wrong. Social psychology most certainly is not limited to the study of the more elementary expressions of the social nature of mind. Some of the most fascinating parts of the field are just those which are often supposed not to lie in the field at all. For example, the dispute of the mechanists with the vitalists, in biology, or of the realists with the idealists, in philosophy, will never be properly understood until we have made a beginning on the social psychology of these interesting beliefs. Naturally most of this work is yet to be done—but not all of it. When one finds an article on economic theory which begins by including the fundamental nature of the universe among unsolved economic problems and proceeds to attribute differences of opinion among scientific economists to differences of metaphysical belief,¹⁰ one can not avoid feeling that the

¹⁰ W. H. Hamilton, "Economic Theory and Social Reform," *Journal of Political Economy*, XXIII., p. 562.

ground has been broken here and there. Eventually even the peculiar achievements and more peculiar deficiencies of our scientific knowledge must be sent to the social psychologist for epistemological examination.

It is true, of course, that social psychology can lay no claim to eternal verity, nor can it attempt an appraisal of the human mind in the light of any infinite standard, religious or metaphysical. If there is such a thing as absolute truth it can hardly come within the ken of social psychology; for the minds which are examined by that science are minds which exist under particular and, therefore, partial social environments. And it is equally true that epistemology has in the past been chiefly engaged in just this task of transcendental appraisal. Perhaps it is still too early (after two thousand years of speculation) to say whether this sort of epistemology has been fruitful or not. It does seem fortunate, however, that, just at the time when the value of the old epistemology is being seriously impugned by the combined forces of new realism and pragmatism, a new epistemology should be arising about the significance of which there can be no doubts. For the new epistemology—social psychology—is already in process of becoming our chief instrument of control over social evolution.

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THE PROOF-READER'S ILLUSION AND GENERAL INTELLIGENCE

IN a demonstration lecture given in the summer of 1917 to a group of some forty students in elementary psychology, interesting data were collected concerning the ease with which the proof-reader's illusion could be set up in a large group. Furthermore, since material was at hand for an intelligence rating of the reagents it was possible to correlate the two sets of observations.

The class as a whole had been divided into two sections on the basis of the pooled score from an hour's examining by means of the following tests: Hard and easy opposites; Hard and easy directions (Woodworth and Wells); Disarranged sentences; Analogy test; and Information test (marking true or false a series of 25 propositions). The sectionizing of the class on the basis of these group tests proved very successful so far as general capacity in class work was concerned. There was, of course, little difference between those at the end of section one and those at the head of section two. Moreover,

two or three students fell into the second or poorer section by reason of their slowness in reaction, although the quality of their class work proved to be equal to that of the average of the other section.

In conducting the illusion experiment, a revolving blackboard was set up on a high platform sufficiently elevated to be easily seen from all parts of the assembly room. The class was seated in center and front seats. Upon the blackboard the following sentence was printed in large plain type. "An examination four preachers' certificates will take place at the close of June." The sentence was written in three lines. The content of the sentence was determined by the fact that the majority of the class were preparing to take examinations for teachers' certificates at the end of July. The sentence as written gave opportunity for two, possibly three, word-substitutions, namely "for" for "four," "teachers" for "preachers," "July" for "June"; for four letter-substitutions; and for the supplying of four omitted letters. Altogether, ten or eleven misreadings were possible.

The blackboard was slowly revolved by hand at an even speed. Four exposures of the sentence were given. The reagents after each exposure wrote what they had read. Immediately following the fourth reading, papers were signed and collected. Each reagent recorded also the number of the row in which he sat and his position with reference to the center. This was done in order that the effect of distance from the platform on speed of reading might be estimated. Three papers collected from row seven were thrown out because the reagents appeared to have difficulty in reading at the distance. Forty-three papers were available for analysis.

A preliminary survey of the material showed the frequent presence of the anticipated illusions, except that of "July" for "June." Only one reagent made this misreading. On careful reading of the reports, it was evident that they fell obviously into four groups: (A) those in which the sentence was read with anticipated corrections on the second exposure; (B) those in which it was read on the third; (C) those in which it was read on the fourth exposure; and (D) those in which it was left incomplete or read as a meaningless jumble of words. In the fourth group are also included two papers in which the sentence was read in bits, progressively from the first to the fourth exposure. These two reagents probably belong in a group by themselves; they are very conscientious, canny, and critical.

That the seating did not effect results materially is shown by the following observations. The eight members of group A had a representative in each of the seven rows; the twelve members of group D were distributed as follows: Row I. (2), Row II. (1), Row III. (4), Row IV. (1), Row VI. (4).

Table I. gives the number of reagents belonging to each group and the distribution according to sections. Six reagents took part in this experiment who were not present for the "intelligence" examination; they are entered as Unclassified.

TABLE I

NUMBER READING SENTENCE ON SECOND EXPOSURE (*A*), THIRD EXPOSURE (*B*), FOURTH EXPOSURE (*C*), AND FAILING TO READ SENTENCE (*D*).

	Group				Total
	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	
Section 1.....	6	6	6	2	20
Section 2.....	1	2	5	9	17
Unclassified.....	1	2	2	1	6
Total.....	8	10	13	12	43

It is obvious at a glance that the members of the first or more intelligent section read more rapidly (bigger attention span) and utilized meaning (shown by presence of illusions) to a greater extent than did the members of the second section.

A further comparison is instructive, namely, the number and kind of illusions present for each group. This could be determined both for the first complete reading of the sentence and the final reading of it. How will the reagents who succeed in deciphering the complete sentence on the second exposure, with the suggested corrections, handle the situation on the next two readings? The actual illusions present for each group, given in terms of the percentage of possible illusions and classified under the three heads, Supply of omitted letters, Letter-substitution, and Word-substitution, point to some interesting conclusions. See Table II.

For Group *C*, since the first complete reading does not occur until the fourth exposure, but one set of figures can be given. Nor is it possible to include in this summary the records of the twelve reagents of the fourth group as their sentences were left incomplete or wild guesses were made out of all relation to the words actually presented. The following examples may be given of such wild substitution: "An examination of four special certificates will take place the close of June;" "An examination reaches certificates and will take place at the," "An examination four teacher's certificates will be held at the University." An occasional number of these wild guesses are also found in the reports of group *B* and *C*; two papers from each set can not be used in the tabulation of illusions because of such unclassifiable errors. In group *A* no such bare guessing or wild substitution occurs.

TABLE II

PER CENT. OF EACH KIND OF ILLUSION FOR EACH GROUP.

First Complete Reading

	Group		
	<i>A</i>	<i>B</i>	<i>C</i>
Supply of omitted letters.....	100	100	99
Letter-substitution.....	94	94	86
Word-substitution.....	71	46	46

Final Reading

Supply of omitted letters.....	94	100	
Letter-substitution.....	78	94	
Word-substitution.....	29	38½	

From a study of Table II. it is obvious that the members of group *A* are more susceptible to the illusions so far as their immediate reaction is concerned than are those in groups *B* and *C*. This is especially true with respect to the most complicated illusion, namely, word-substitution. Group *A* shows, however, a quick recovery from the illusions and a strong tendency to correction of errors on subsequent readings. Illusions involving the substitution of words are less easily set up than those involving merely letter-substitution or supply of missing letters. No reader, even on the fourth exposure, perceived every word exactly as printed. Every one, for example, inserted the "i" in "examination."

SUMMARY

Susceptibility to the proof-reader's illusion correlates with general intelligence to a considerable degree. Reagents, little intent upon meaning or with a narrow span of attention, give evidence of this in both the intelligence and the illusion test.

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REVIEWS AND ABSTRACTS OF LITERATURE

Physiological Chemistry. ALBERT P. MATHEWS. Second Edition. New York: William Wood and Company. 1916. Pp. 1040.

Normally the appearance of the second edition of a successful text in physiological chemistry does not offer matter for comment in psychological and philosophical circles. However, in the second edition of so widely used a text as Mathews's *Physiological Chemistry*, the case is different because of Professor Mathews's specula-

tions in regard to the nature of consciousness. The importance of the book in its own field renders these casual comments something to be reckoned with. I shall accordingly notice only so much of the book as is of direct interest to the philosopher or psychologist.

Professor Mathews's position is, on the whole, materialistic, but it is at best an unstable materialism which easily breaks down into a form of panpsychism in the presence of any persuasive analogy. The materialistic interpretation appears first in the chapter on "The General Properties of Living Matter." He finds the solutions which regard psychical phenomena as outside of the chain of physical causes, *i. e.*, as parallel or epiphenomenal, as most unsatisfactory, "since if consciousness has this position it becomes difficult to attack the problem as all other physical problems have been attacked" (p. 7). He hazards this prophecy: "It may prove to be the case, although the evidence is certainly not favorable at present, that consciousness, or rather the psychical basis of it, should be put together with heat, light, and electricity as one of the accompanying manifestations of energy transformations in living and, presumably, in lifeless things also" (pp. 7 and 8). Aside from the difficult feat involved in counting a "psychical basis" in the same series with forms of physical energy, as this sentence demands, it is one of the most elusive sentences that could well be penned on the subject of consciousness. For while taken in connection with the paragraph in which it belongs, it undoubtedly points to a way of viewing consciousness as a "portion of transformed energy"—certainly a materialistic conception—yet at the same time it suggests strongly a universal parallelism or a panpsychism such as Clifford's, according to which the humblest atom has its quota of "mind-dust." Quite in accord with this panpsychic view we find Professor Mathews speaking of "the physical-chemical-psychical constitution of protoplasm" (p. 6).

It is, on the other hand, the materialist speaking when Professor Mathews writes: "It is, however, very important to remember in the course of the transformation of potential into kinetic energy in living matter that the kinetic energy may appear in various forms, and that if it appears in some other form than heat, the heat which one might expect to appear does not do so, but this is replaced by light, electrical currents, movements, possibly psychic energy, if there is such a thing, or some other form of energy of movement" (p. 8).

I need only mention in passing the instructive analogy which Professor Mathews draws between the rate of absorption of oxygen by linseed oil after a period of inductance and the phenomenon of memory in connection with chemical changes in the brain cells (pp.

68 and 69). His conclusion that "perhaps the brain cells remember longest because they most carefully maintain intact, or preserve, these labrile autocatalytic substances" (p. 69), does not show necessarily either a materialistic or a panpsychic bias. The reader feels, however, Professor Mathews's very evident delight in the analogy and suspects more panpsychism than is admitted.

But be that as it may, Professor Mathews expresses himself in another instance in less dubious terms. In conclusion to the chapter on "The Master Tissue of the Body," he writes:

"We may close this chapter in no better way than in opening the question of the origin of the psychic qualities which are so related to the nervous system. Do these qualities arise *de novo* in the nervous system? Are they not found in their faintest form way down the slope of animal life? Do we not indeed see the beginnings of psychic life among the plants? And is it possible to start with the plants? Do not the foods every minute change into living matter in our bodies? Are not the atoms the same in the foods and living matter, and is it possible that they have different properties in the living and lifeless form? The atoms we know now are composed of electricity and the valences, or chemical bonds, are probably also electrical in nature. Are our thoughts also at bottom electrical? Whenever a nerve impulse sweeps over a nerve it is accompanied by an electrical disturbance, and this disturbance is the surest sign of life. When the nerve impulses play back and forth over the commissures of the brain they are accompanied by this pale lightning of the negative variation. Is that pale lightning what we recognize as consciousness in ourselves? It would seem that there must be some psychic element in every electron if the atoms are made of electrons. There must be some psychic disturbance in every union of hydrogen and oxygen to make water and in every wave of the wireless telegraph. When an electron moves it generates a magnetic field; does it also generate a psychic field? How shall we escape the conclusion that there must also be a psychic element in all matter both living and lifeless, since that matter is the same in the two forms? May it not be that just as magnetism, which is probably an attribute of all molecules, becomes most evident under certain conditions in certain substances, so the psychic life common to all matter shows its true character plainly only when organized as it is in the brain during its life? A magnet when heated loses its magnetism as surely as an organism when heated loses its vitality and its psychic life. In the case of magnetism all that has happened by the heating is that the orientation of the molecules has been changed so that the magnet is no longer an individual; in the case of the organism a similar loss of individuality results" (pp. 594-595).

Here once more we find the possibility of a materialistic interpretation of the position if we take literally the phrase "the pale lightning of the negative variation," while we find no less surely an equally plausible parallelistic interpretation by putting into prominence the sentence: "When an electron moves it generates a magnetic field; does it also generate a psychic field?"

It is apparent that Professor Mathews is caught in the old and artificial dilemma that consciousness is either a mental stuff or a form of energy. Neither view satisfies him and so he passes restlessly from one to the other and back again. Unfortunately he ignores the tendency so promising in modern psychology and philosophy to regard consciousness as neither mind stuff nor a form of energy, but as a mode of behavior. A consideration which evidently inclined Professor Mathews toward the older explanation of consciousness is voiced in a question which he asks rhetorically, but which I am inclined to accept as real: "Are not the atoms the same in the foods and living matter, and is it possible that they have different properties in the living and lifeless form?" It is evident that he believes that the first part of the question calls for an affirmative answer, and the second part for a negative. This is indeed a favorite argument for believers in mind stuff, and at first sight it seems but a corollary of the principle of evolution that complex forms of consciousness should come from simple forms. As actually employed it leads to a denial of novelty, to what James called "the block universe." Even, as James would say, while we hold in common with the goodly company of ancient scholastics and modern scientists that in regard to matter and energy it is certain that "*ex nihilo nihil fit*," yet we must still insist that novelty of quality and novelty of behavior are only what is to be expected from novelty of organization. The sum of our distinctions between lifeless and living matter is precisely this, that living matter, because of certain new forms of organization, has new ways of behaving not possible to lifeless matter. When we make the further distinction between living matter and living matter which is also conscious, we notice still greater novelties in ways of behavior. The step from the merely living to the conscious is no less a step than from the lifeless to the living, for we pass hereby from a world causally controlled to a world where purpose enters.

We see a promising garden, for instance, beaten into the ground by a summer hailstorm, but the swallows in the midst of all this destruction are chattering under the eaves out of harm's way. The plants were killed, for they were unable to do more than suffer mechanically the dire effects of the pelting ice, but the birds, feeling

the discomfort of dampness and sharp blows, saw meaning in the eaves. They sought shelter, and to seek shelter means to follow a promise and to be controlled by a possible future. It is this difference of control which marks the entrance of conscious behavior upon the stage of the world.

It is then because Professor Mathews has ignored what is distinctive in conscious life that he has rendered consciousness quite unintelligible. This does not mean that students of philosophy who are intent upon the question of consciousness have not much to learn from a book of such scope as this. Only by working in conformity with established scientific facts in regard to the structure and functioning of the nervous system can they hope to make progress with the problem of consciousness. But the obligation is not entirely one sided. Such guesses as Professor Mathews has made in regard to consciousness should serve as a warning to his fellow scientists, that the nature of consciousness will never be revealed by a purely physiological or physiological-chemical analysis. Such an analysis when attempted seems to have less in common with scientific procedure than with the immortal adventure of "Hunting the Snark."

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The Essentials of Logic. R. W. SELLARS. Boston: Houghton, Mifflin Company. 1917. Pp. 343.

In many respects Professor Sellars's book has the merit of putting the subject-matter of logic before the student from the viewpoint of the present day. He has profited by recent discussions in his field, and has introduced in a profitable way not a few extracts from recent authorities. Another merit is the large number of fresh examples—often intrinsically superior. His style is clear, and often sententious and forceful. Among many excellent discussions may be noted the chapters on definition, fallacies (with the improved division of the subject), and hypotheses.

Pedagogically one finds ground for discontent. The author intimates that students have frequently asked him "whether logic is a practical subject." This inquiry—assuredly not an unreasonable one—is probably present, even when unexpressed, in all undergraduate logic classes. In the face of it, a wise exposition of the subject would seem to involve a representation of logical questions and principles as arising out of the needs of everyday life, and logical processes as simply extensions of ordinary thinking and critical improvements upon it. Such a course is not feasible, however, if, as in the book under review, argumentation occupies the first third or more of the treatment and is introduced by an abstract

chapter of definitions. As well might a physical director, after a few general statements, set his beginners immediately at fencing. At the outset logic is defined as "the science of . . . correct thinking," and thinking, the author tells us, is "the operation which underlies knowledge and opinion and makes them possible." It would seem, then, that "thinking" must include all forms of cognitive consciousness; but this inference is promptly denied us, perception not being knowledge. "Knowledge is primarily an affair of conception, of rules and principles." Surely the student may be pardoned some doubt as to the practicality of logic when it starts in by assuring him that knowledge of his seatmate consists not in seeing or touching or hearing him, but in recognizing that such class names as *mammalia* and *bimana* apply to him! We are told, quite commendably, that logic "desires to see how knowledge is built up." It is reasonably to be hoped that every intelligent college student would share this desire, if only a perverse definition (as it must seem to him) were not first given to knowledge; and if only the inquiry began with what seems to him his surest knowledge—his percepts—and then (following the lead of the subject-matter) the way ideas arise from experience, and the uses they have in thought and life, were clearly set forth. Our author, however, following traditional usage, assumes the existence of ideas (they are knowledge, and knowledge is the *datum* of logic!) and proceeds to point out means of manipulating them effectively. Of course, much concerning the genesis and primary function (interpretation, *etc.*) of ideas is given later—much later—under the general headings of induction, explanation, *etc.*

The psychological and positivistic distinction between facts and ideas does not appeal to Professor Sellars. Fact, for him, is not an accredited bit of experience, but "that which is admitted for the purpose of the argument"—a definition which, by including true *ideas* as well as empirical facts, blurs the very distinction between fact and theory he is dwelling upon, suggesting, for example, that it is the same as that between premise and conclusion, and excludes from logic the clearest and most useful application of the principle of positivism, the claim, namely, of the man of science that accredited empirical facts, *qua* empirical, are more certain, trustworthy, and authoritative than any *ideas* whatever, whether granted or disputed. Argumentation, thus entered as the first case on the docket, is nevertheless interrupted in the traditional way by a chapter on classification, in which for the time words give place to things as the subject of discourse. One does not see why all that in this chapter serves argumentative purposes could not be included in the chapter on

terms, nor why, by the way, the discussion of terms should precede the chapter on language.

Our author's conceptual bias is manifest again in his treatment of explanation. This appears toward the end of the book, and six chapters after the discussion of hypothesis. Is there, then, no close relation between hypothesis and explanation? It would appear not, for we are assured that "all explanation is in its essence deduction"; that is, it consists in showing that the thing in question "follows from something else already known"—a statement which must be read in the light of his definition of knowledge as an "affair . . . of rules and principles," or the deductive aspect will be far from evident. "We move downward," he says, "from rules to cases, from principles to their exemplifications." Do we? A boiler explodes. We explain it by the expansive power of superheated steam. Here are an empirical fact (the explosion) and an idea, or principle. With which of them does thought *begin*? Obviously with the fact. *To what* does it move? To the principle as applying to the fact. If the principle itself is not new, that is, if it is one of our tested ideas, the explanation process consists in trying one idea after another upon the challenging object until we find the one that fits. Surely it is straining terms to call that process deductive. It seems to be quite akin to ordinary identification by means of classes, and as little as in that process to be a starting with a principle and by means of it finding the fact. When the explanation of the explosion was made for the first time the interpreting idea was even more evidently at the end of the thought process, not the beginning. Then the inquirer had to *achieve* the principle, and he necessarily achieved it through critical study of empirical facts—working from experience to some satisfactory idea. This is the process of hypothesis formation and development, and is plainly inductive. Moreover, general explanation—the kind the author has in mind—is by no means the only kind. In common life our "whys" more often seek concrete answers. Why did consols go off three points yesterday? Why did Virginia's cake fall? are demands for explanation which are not to be satisfied without concrete particulars. No doubt one can put general principles behind the heavy sales of some banking house, or the unwise opening of the oven door, just as the Hegelian can always reduce any situation to a plexus of universals; but that conceptual block building is never what is actually sought in explaining a practical difficulty. The essence of explanation, as Jevons and Dewey have made evident, is in the clarification of the mental outlook which occurs when a new object is related harmoniously with our prior knowledge, that is, when our system of facts and meanings (ideas)

is enlarged so as to include the new *datum*. In this process fact and idea, precept and concept, are used without partiality and with reference only to the service rendered to the system.

The author's discussion of the syllogism has original features, but on the whole overstresses the mechanical side. The valid moods, for example, are determined by inspection, when, if the movement of thought in the several figures is really comprehended, including a very few evident implications, the student will mentally deduce the moods with only a few minutes' reflection. A good feature of the book is the chapter on testimony and circumstantial evidence. The concluding chapter is taken up with an interesting discussion of truth and its tests, pragmatism naturally coming in for critical attention, but not, as the pragmatist will think, for adequate appreciation.

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JOURNALS AND NEW BOOKS

THE PHILOSOPHICAL REVIEW. July, 1917. *On Cosmic Reversibility* (pp. 361-377): BENJAMIN W. VAN RIPER. — It is usually admitted that reversibility is an implication of a mechanical view of the universe. The present paper maintains that even in this respect too much has been conceded to mechanism. The inapplicability of the concept is shown with respect to human-made machines, science, mathematical equations, and to spatial series. *Leibniz and German Idealism* (pp. 378-394): HIRALAL HALDAR. — The thesis here is that the great idealistic systems of Germany have been dominated by the central conceptions of Leibniz. "Leibniz's way of conceiving of the ultimate reality is, in essence, also that of Kant, Hegel, and Lotze." *The Subject-Object Relation* (pp. 395-408): HENRY E. BLISS. — Largely a series of distinctions and definitions with respect to such concepts as reality, appearance, external, internal, consciousness, mind, object, subject, perception and percept, undertaken with a view to showing the false basis of a phenomenalist or idealistic empiricism. *Discussion: The Dualism of Mr. P. E. More*: CLARISSA RINAKER. — "It is the purpose of the present paper to show that the system of philosophy which Mr. More has set forth in his 'Definitions of Dualism' in the eighth volume of *Shelburne Essays* is not really dualistic; that in its practical working it is partly pragmatic and that in the last analysis it is essentially idealistic." *Review of Books*: John Dewey, *Essays in Experimental Logic*: R. F. ALFRED HOERNLÉ. Gustave Le Bon, *The Psychology of the Great War*: ERNEST ALBEE. Henry Wilkes Wright, *Faith Justified by Progress*:

WARNER FITE. Cassius J. Keyser, *The Human Worth of Rigorous Thinking*: WARNER FITE. *Notices of New Books. Summaries of Articles. Notes.*

REVUE PHILOSOPHIQUE, July, 1917. *Les problèmes de la langue à la lumière d'une théorie nouvelle* (pp. 1-30): A. SECHE-HAYE. - Exposition of the theory of Ferdinand Saussure, according to which "there are two linguistic problems: the synchronic problem, which concerns the states of language, organized systems, and the diachronic problem, which concerns the transformations of which all parts of language are the theater." These questions can not be reduced, the one to the other. *L'idée de phénomène dans la philosophie de Charles Renouvier* (pp. 31-58): LIONEL DAURIAC. - The phenomenism of Renouvier is essentially an anti-substantialism, and he sought to find in the idea of law the substitute for substance. *Études de logique comparée* (second article) (pp. 58-76): P. MASSON-OURSSEL. - Chinese reflection failed to constitute a theory of reasoning or an objective science of nature. But the Chinese sophists posited several logical problems, the commentators of the *Yi King* erected the scaffolds of a kind of universal mathematics, and the Taoists comprehended the relativity of contradictories. *Revue Critique. L'Intellectualisme et la philosophie Bergsonienne*. Harald Höffding, *La philosophie de Bergson, exposé et critique*; Frank Grandjean, *Une Révolution dans la philosophie: la doctrine de M. Henri Bergson*: J. SEGOND. *Analyses et Comptes rendus*. F. Kieffer, *L'Autorité dans la famille et à l'école*: E. CRAMAUSSEL. *Revue des Périodiques*.

- Coffey, P. *Epistemology or the Theory of Knowledge: An Introduction to General Metaphysics*. London: Longmans, Green, and Company. 1917. 2 vols. Pp. xiv + 374 and viii + 376. \$7.50.
- Severn, Elizabeth. *The Psychology of Behavior: A Practical Study of Human Personality and Conduct with Special Reference to Methods of Development*. New York: Dodd, Mead, and Company. 1917. Pp. ix + 349. \$1.50.
- Vance, J. G. *Reality and Truth*. London: Longmans, Green, and Company. 1917. Pp. xii + 344. \$2.50.

NOTES AND NEWS

A MEETING of the Aristotelian Society was held on November 19, Dr. H. Wildon Carr, President, in the chair. A paper was read by Mrs. Karin Stephen on "Thought and Intuition." The paper was an

attempt to give a clear statement of Bergson's theory of knowledge. Bergson confines his attention to knowledge of existence and, for him, the best way of knowing existence is to be acquainted with it. Thought, which can only give knowledge *about*, is, for him, a *pis aller*, and he only deals with it in so far as it affects the actual experience which we get by acquaintance. Thought and acquaintance defeat one another, nevertheless in practise we try to carry on both operations together and the result is our every-day experience of things having qualities and relations. This experience is a hybrid product: it still has some of the content of the original act of intuition, but whatever could not be used as material for thought has been left out of it, and it has borrowed the form which belongs to the symbols used by thought: it has been "intellectualized."

According to Bergson the intellectualization of experience is not confined to instances how and there: he claims that the whole notion of experience as consisting of distinct things having qualities and relations results from our having imposed the form which properly belongs to the symbols of thought upon our actual experience. Bergson's new philosophical method comes simply to this: that instead of confining our attention to just so much of experience as lends itself as material for thought, and instead of intellectualizing our experience, we reverse our mental habits, make an effort to enlarge rather than to limit the whole field of experience with which intuition acquaints us, and attend to it directly without any intermediary.

A meeting of the Aristotelian Society was held on December 3, Dr. H. Wildon Carr, President, in the chair. Mr. F. C. Bartlett read a paper on "The Development of Criticism." An attempt to trace broadly the development of criticism reveals four main stages: the simply appreciative, the conventional, the rational, and the intuitional. At the first, criticism is the immediate outcome of the feeling accompanying ease or hesitation of reaction; at the second, a situation or object is criticized by virtue of its relation to a mass of preceding experience, the latter remaining relatively vague and unanalyzed; at the third, definite rules of criticism are developed; at the fourth, the verdict passed is regarded as the outcome, on the one hand, of the peculiar nature of the object, and on the other hand, of the relation of the object to the critic. Affective factors play a dominant part throughout in the production of criticism; while the direction of development is determined by a persistent "effort after meaning."

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

HYPOTHESES AND INSTRUMENTAL LOGICIANS

THAT thinking is, in some sense or other, solving of problems which come up in the course of life; that there are often in it stages such as getting clear about the problem, and then imagining suggestions towards a solution, followed by some sort of testing of these suggestions: all this has been well made out by those who call themselves instrumental logicians. Professor John Dewey has recently told us that all judgments are practical;¹ and the typical judgments are, therefore, those wherein we decide our future conduct; judgments which, he maintains, get themselves realized true in this conduct itself. I write as one somewhat sympathetic, I think, with this school, yet as one, after all, trained in another tradition; and while verbally I might subscribe to almost all of the above, I doubt if it would mean the same to me as it does to the admiring disciple. I shall try to expound some of these same matters in my own words, and maybe the difference of viewpoint will then come out. I am not trying to refute anybody, but trying simply to find the truth.

Professor Dewey tells us to examine especially practical judgments and see how they lead to their own realization. An example might be: "I ought to go see a doctor." Very well, let us suppose a case. I am ill; I judge I ought to go and see a doctor; I do so; in spite of that I get well. Just what is proved by that process, and what realized? Professor Dewey leaves me in doubt. I can see cases where a judgment is followed by a sort of realization of itself. If I judge I am going to try and see a doctor, and if I make the effort, then indeed this judgment is followed by its own realization in my act. But so long as it is a mere statement of future fact, I do not perceive that it is so very useful in guiding conduct, hardly more so, if at all, than if I had made my judgment about the future conduct of Woodrow Wilson. But change the judgment into the forms that practically do guide action, such as, "I ought to go";

¹ That is, "practical" in the sense of not being understandable in abstraction from the total behavior process of which judgments are a part. Professor Dewey uses the term "practical judgment" to refer specifically to the typical sort mentioned in the next clause.

and immediately the judgment ceases to be completely realized or verified by any one single experience. If in the future I go, well, I go; but the "oughtness" of it depends on other considerations, and would still have existed if I had not gone. Furthermore, even in the cases that do seem realizable by my own act, such as, "I am going to make a fool of myself," the practical purpose of the judgments is, as often as not, to avoid "realizing" them; which indicates at once that their real signification is hypothetical and not categorical at all; it is, "If I continue thus, then I make a fool of myself"; and so they are shown to refer, not to future fact, but to the potentialities of the situation, and are not directly, at least, ever realized by any one particular future fact.

Had I been called upon to point out the "practical" judgments, I think I should have adduced first of all the case of the comparative judgments, judgments such as, "If I do this, result *A* follows; and if that, result *B*"; hence leading to such other comparative judgments of valuation as, "It is better to do this than to do that." I seldom catch myself saying, "This is the thing to do," that I do not find it a mere ellipsis for, "This thing is better than the other things I might do"—again a comparison. But now notice in what sense it is possible that I ever can verify the judgment, "This is better for me to do than is that." It is not in my subsequent act, for I may do *this* and get into trouble, yet be all along convinced I had got into worse trouble by doing *that*. The essence of the thing is comparison, and you can not reduce comparison simply to behavior, to the separate acts compared. It takes two members to make a comparison, and if both ways of acting were compossible, these practical comparisons had not needed to be made. I admit and I assert that these comparative judgments are practically valuable partly because they do somehow or other get tested in subsequent experience, but the precise "how" of it is, I take it, not so simple a matter as instrumental logicians wish to make out.

That all our thinking is deferred action, was a thought which came to me first with something of the thrill of a new revelation. Like the instrumentalists, I failed to note as clearly as I now think I should have done, what sort of a difference it makes in the acting to have it deferred. I saw the likeness and slurred over the difference. I should now lay rather more stress on the deferring than on the acting. Action is by trial and error; thinking is trial and error, too, a "thought experiment," as Mach says. But there is a difference. In action I come up against the unanalyzed thing; in the thought experiment, I take my past experiences apart, and try combinations of the elements,—I compare the data, and the results I infer. There is comparison in thinking. Wherever I find thought

I find comparison—everywhere, except in the instrumentalist account of thought.

But let us now consider also some other aspects of thought. Instrumental logicians often emphasize the importance of hypothesis in thinking. Of course this is not new with them. I learned of hypotheses first from the writings of Mill and Jevons and Naville, and then from C. S. Peirce. I think it can truly be said, however, that no one has made so clear as has Professor Dewey how it is that hypotheses are not peculiar to profound researches of science, but enter into the very heart of everybody's every-day thinking. It is good to have that set forth. But it is unfortunate if we forget in the crudeness of our workaday examples the subtle intricacy of the thing at its best.

Let us consider one noteworthy aspect of the hypotheses of science. There are at least two important sorts of probability. There is class-probability, which is in question when we estimate the percentage of members of a class having a certain property from observing what percentage of obtainable samples have this property, when there is no reason to suppose the samples are not fair and representative. Here we argue beyond what we observe to something homogeneous with it. And there is another sort of probability, the sort which the verification of the hypotheses of science, properly so called, always exemplifies. I verify the time of swing of a pendulum, and I make something more probable about the rate of rolling of a ball down hill or the wobble of a spinning top, things outwardly most heterogeneous with what I actually observe. No thoughtful student of mechanics can help being impressed by the systematic structure which holds these diverse things together. Now a scientific hypothesis *is* an hypothesis, properly so called, only when its "verification" makes something more probable which is *not* verified, that is, not, at the moment, observed. This is the very essence of scientific hypothesis: to see one thing and conclude about another. If I were to guess that to-morrow will be rainy, and then wait until to-morrow to see what happens, and if I then actually find that it is rainy, my guess was a good guess, but it was not an hypothesis. For when I look out the window at the rain, I see the whole of my conjecture realized—it has, indeed, realized itself, as Professor Dewey says—but at the end of the process I know no more than if I had waited without guessing—except indeed, for the knowledge that I am able to make guesses that sometimes come out right, which was not itself the original guess, but due to a subsequent comparison. If I had guessed that to-morrow would be rainy *because* of the appearance of the sunset, then my guess would have begun to be an embryo hypothesis; and then, when I verified it, I should have been

rendering probable, not the rain which I see, but the connection between it and the former weather signs, a connection that I do not directly observe. In verifying hypotheses we render probable, not what we observe in verifying, but something else. And the reason this is possible is that hypotheses have to do with systems,—and instrumental logicians, I understand, abhor systems and structures, and, therefore, their account is bound to miss the essence of the matter.

In the second volume of his large treatise on logic, Bernard Bosanquet has given us an account of scientific hypotheses which is almost good enough to cause one to forgive him the rest of the book, and even its philosophical background. We work with an hypothesis, as he says, by a process better called molding than verifying; we do not chuck it overboard when it fails us, we modify it. The instrumental logicians do not tell us much about this. Nor do they remind us, as does Duhem, how we seldom or never verify one hypothesis, but always a group of hypotheses, a system of them, all at once. And there is much more to be said still about hypotheses; but perhaps I have said enough to suggest why I think the instrumentalist logicians are hardly past the alphabet.

But I have a further difficulty when I try to place Professor Dewey and other instrumentalists in my own mental categories. It is because something they praise very highly in the abstract they scarcely ever mention when they come down to concrete details. I refer to the social side of the life of thought. Robinson Crusoe on his desert island might appropriate to himself almost everything that I have read from Professor Dewey about thinking. The existence of other people seems the merest accident in the process. The only person I know about, who has really tried to tell us what differences other people make to the processes of our thought, is Professor Royce. He did not succeed very well. I could wish Professor Royce had come upon his concept of "interpretation" earlier; that he might not have left it to us a mere hint. But Royce did see that we are not solipsists, and that solipsism is itself a shaky inference and not a self-evident fact;² but he saw, also, that we are,

² Those who say solipsism is logically sound but practically absurd seem to be making a confession about their own brand of logic. Their logic will invariably be found to be a logic which does not do justice to the methods of handling hypotheses and interpretations. Solipsism is "not absolutely refutable" only in the sense in which I should not be refutable if I took it on myself to maintain that the whole world with all its stars in the sky and fossils in the hills, and all its cities, and libraries, and memories in the minds of men, was created out of nothing at 3 o'clock yesterday afternoon, that is, by deliberately giving a violent interpretation to the evidence. To establish solipsism, furthermore, requires not merely that one should directly experience one's own existence,

nevertheless, in a way isolated from one another, and alone, and that we need to interpret one another to ourselves, and ourselves to one another. Interpreting is doubtless a sub-species under the instrumentalists' general head of problem-solving, but it is problem-solving of a peculiar sort, and wherein the test of the hypothesis is a peculiar test. But to me, Professor Dewey seems to talk as if oblivious of these problems; like a solipsist who prefers to call solipsism by another, gentler name, some name of magic suggestion such as "experience," but a solipsist still. I am sure he does not mean it so, his ethics is full of "social" life, almost too full; but in his logic this aspect is mentioned only, and—then waved aside.

I am not saying that Professor Royce's notion of "interpretation" is what we want, but I should like to see it, or something like it, tried out. Royce seldom wrote more powerfully than in that brief but scornful passage in the second volume of his *Problem of Christianity*, in which he dismisses as incredible the ordinary opinions as to how we are supposed to come by analogy to know about other people. Would he had given us more of construction! And, I may add, less of his absolutism! for he wastes his time, or so it seems to me, in efforts to prove there is one true interpretation of all things, when it would have been so much more plausible, as well as useful, to have acknowledged that there are many interpretations of any one thing, and all of them, if their basis in fact is well set, alike capable of being equally true interpretations, though different.

But to return to the social aspect of thought. There is a sense, there are senses, in which each of us is alone. For instance, if you see red where I see green, and what I call "red" you call "green," I suspect we might think ourselves in full accord about qualities, when we were, as a matter of fact, not. Our common meeting-ground is elsewhere; it is in the form and structure of the world. I notice you come into the house by the door, even as I do, and that you do not try to walk through the wall; that you notice likeness and difference where I do; that you act with reference to the same structure of things as I act. That is why language, because it grew out of activities, can convey information. Surely the instrumentalists ought to be interested in this. But I would remind them, also, that language to-day has come far. I do not hand over to you nowadays a thought, or even let you see any very intelligible act.

but also directly experience that other people do *not* exist, a sheer impossibility; or else it is to be done by inference and hypothesis and interpretation. In the latter case the evidence to the contrary, for any logic that properly considers the nature of evidence for hypotheses and interpretations, is overwhelming. Incidentally I may add that Professor Royce's own Absolute has a little too much of the solipsist about him, but that is another question.

What I send you is vibrations in the air or black marks on paper, stuff and gibberish *per se*. Yet there is an hypothesis in the sending; one that will not get verified directly, and awaits its verification in the terms of another hypothesis I shall make when you react, one which will endeavor to interpret your replying act. And there is an hypothesis, too, in your receiving; one wherein you will endeavor to interpret what these sounds and marks mean. It is complex; you can not make it simpler without deceiving yourself. "It is a wonderful thing, this wireless telegraphy," said someone to Marconi. "Yes," he replied, "but not so wonderful as the way we are here talking together." And I think he was right. Science is a great cooperative enterprise; and he who would understand scientific thinking must comprehend how this cooperation takes place. Yet instrumentalists, so far as I have observed, talk only of stress and conflict within what seems to be my train of thought, and tell us only how the conflict there is allayed, as if I lived alone with my dog "Experience" on Crusoe's island.

This notion of "stress" or "conflict" may well remind us of another problem. What is this stress, this conflict? It is not like the clash of fire and water; it is a more figurative, more spiritual clash. It is not merely the clash of incipient movements in my organism, which has its mechanical resultant. It is a clash which does not always arise when it ought to, though the elements are there in juxtaposition. I sometimes suspect the real problem in thinking is to get the fight started, and not to get it settled. Professor Dewey says thinking is not our usual occupation; people do not go on hunt of trouble; they think when the occasion arises. Maybe this is true of people. And it is ever so much truer of oysters, they wait for whole centuries before beginning to think at all. I do not recognize in it altogether a description of myself, who spend a considerable amount of my time hunting trouble intellectually; still less of those higher beings I admire from afar, who know how to solve problems as well as raise them. So I suggest to the instrumentalists that those notions of "conflict," "stress," "problem," which they bandy about so light-heartedly, present a very serious problem which I would urge upon their consideration. Or would they remain like the sweet and placid oysters, untroubled by such rude problems? Ignoring problems is one method of settling them, according to the enumeration by Professor Dewey.

There is still another lacuna in the instrumentalist logic. They have given us the manual of arms, or part of it, describing the tricks of thrust and parry when the enemy is upon us. But the strategy of campaigns they do not discuss. In the great cooperative enterprise of any one of the sciences, there are indeed outposts push-

ing rather blindly into the unknown. But it is true in this war, as in the wars of nations, that campaigns are won when strategic positions are seized, and as the military men say, "organized." A logic of science ought to tell us of these things. The mathematician, for example, might write down myriads of valid equations, but from the mass of them he picks out maybe just one; yet that one reveals itself a center from which radiate lines of fertile deduction which make him master of a whole new district of mathematics. Why this marvelous fertility along some lines of attack, and the sterile vanity of others? "All facts are equal for the scientist," say some philosophers. But facts are *not* all equal for the scientist; some are central, some peripheral, some fundamental, some superficial. Why is this? Again we answer that it depends on the nature of the system embodied in the things studied. But instrumental logicians say systems belong to the pre-Darwinian stage of thought, before everything began to flow like molasses. And, therefore, I have doubts as to whether they will ever be able, from their standpoint, to interpret for us the full significance of the great hypotheses and theories of science.

And so I close with a summing up of what I have said above. Instrumental logicians have a theory of how we think. But that theory omits as often as not the things we want most to know. It forgets the immense importance of understanding comparison, if we would understand thinking. Almost all thinking involves comparison, and practical thinking most of all. In telling us how judgments lead at times to their own verification, this theory forgets to tell us how it is that nine-tenths of our ordinary judgments, including all those very practical ones by aid of which we foresee and avoid trouble, are intended to avoid the verification direct, and their truth can not, therefore, consist straightforwardly in the verification of them. Their theory disregards the most specific differentia of a scientific hypothesis, not taking into account how it, unlike a mere conjecture, is intended to render probable something which may not be itself directly verified, and that it does this by verifying other parts of the same system. The instrumentalists do not make prominent enough the importance for understanding language of the fact that language was at first not for the purpose of thinking, but for the purpose of communicating, and that this communicating presupposes a structure in the world and an isolation in minds. The whole social aspect of thinking is, consequently, only vaguely alluded to in passing. Instead they concentrate on how one individual solves a problem—and it must be of one individual they speak, for my ideas never clash with yours while they are thus separated. Yet even here they do not notice how surprising it is that

individual human beings are vexed by problems at all, while individual sunflowers and printing-presses manifest no such symptoms. And, lastly, all the broader strategy of science, and the strategic importance of the great laws of science, have not yet received their attention, though it is a very vital part of how we think.

A disciple of this instrumental school recently confided to me that this sort of logic was the logic of the future. I am inclined sometimes to think it is more in the future than anywhere else. Coming to it from a study of comparative scientific methods on the one hand, and from considering the work of the mathematical logicians on the other, its inadequacy seems to me its most insistent characteristic. Perhaps I shall be told I have misunderstood; or perhaps I shall be told that all these things have been clearly explained in some treatise I have not read. I hope it is so. Meanwhile my little trench raid with gas bombs on the instrumentalists will have served its purpose if I succeed in routing out any of them into further revealing of their position.

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VOX POPULI, VOX DEI

THE French Revolution, that swept away the sacred privileges of so many princes and prelates by divine right, did not sweep away—it sanctified as if with a baptism of fire—the sentiment and the doctrine of the divine right of the nation to exist and evolve its life. The democracies of western Europe and America—the earliest in modern times—substituted popular for kingly sovereignty: *vox populi, non vox regis, vox dei*, they said; but the *principle* of the divine right of kings, its substance, was only rephrased. No provision was made for the time when machines would bring the nations of the earth together and so weld their interests that the acts of each would inevitably affect all; it was not foreseen that certain changes in the economic processes of the world would render the absolute sovereignty of each nation as autocratic toward the rest of the world as kings by divine right had ever dreamed of becoming. As a consequence, modern democracy has meant something other than popular rule. In international affairs, it has meant “secret” diplomacy, “covering notes” between rulers to supplement published understandings, surprise attacks, spheres of influence, forcible annexations, and all that is mean and predatory in foreign diplomacy; in short, it has meant drifting with the selfish and short-sighted purposes of nations, supplemented in cases of conflict between great powers by a sort of gentlemen’s duelling code called international

law. The weakness of this code lies in the fact that when either belligerent chooses to abandon the honor of gentlemen in favor of self-interest, it automatically ceases to control the other belligerent.

The sentiment of nationalism by divine right is very complex. Into it enter as elements most of the prejudices that in the past have given rise to wars. First of all is the prejudice in favor of the prosperity and glory of the particular nation-state with which one happens to be identified. Time and again, this has supported dynastic policies of expansion and aggrandizement that concerned the individual only remotely, if at all. The crime of the modern nation against the individual is evident in such wars: it consists in the subordination of personality to national power and expansion, in our ultimate scheme of values. But this nationalism by divine right also includes race prejudice, religious prejudice, and a whole nest of prejudices growing out of the traditional points of view and habits of thought that characterize the nation. In passing, let it be noted that the herd instinct, so much stressed by certain pacifist writers at present, is not one of these. The prejudice of the average man for the ethos of his own nation, his sense of its superiority and finality, is as the sea is to its finny inhabitants, unfathomed and as a rule unfathomable. Doubtless a thorough democratization of the great governments of the world, would, as Mr. Root says, do more than any other single thing to render permanent world-peace a possibility; but it should be remembered that dynastic policies of expansion and aggrandizement are not the only causes that lead to wars. The ideal of one law, one faith, and one sovereignty, that hovered on the intellectual horizon of western Europe for many medieval centuries has a certain validity for the world; and the realization of its essential meaning for us involves vastly more than the democratization of the world's governments. It involves mutual respect among the nations, a recognition of common problems, and genuine cooperative attitudes to promote the economic and cultural interests of mankind. In short, it involves something like the world religion and world law of which Mr. Britting comes to dream after intolerable personal suffering. Such world sentiments behind a federation of free states would go far toward establishing world-peace, but such world sentiments are squarely opposed to the nationalism by divine right that has been so fatally characteristic of modern nation-states.

This sentiment found its completest literary expression in the political philosophies of Fichte, Hegel, and Treitschke, as it found its completest legal expression in the Prussian military state; but its influence is evident in the almost universal assumption of the nations of the world to-day that no questions of international right are sub-

ject to judicial control that involve either a nation's honor or its vital interest. Nations never go to war except over questions that seem to them to involve both their honor and their vital interest as nations; and you have only to add the logically related doctrine, that weakness is the sin against the Holy Spirit of politics, to get the full programme of militarism, the suppression of which is the sworn purpose of ourselves and our allies in this war.

Meanwhile, the economic revolution that began with the invention of machines on a large scale about one hundred and fifty years ago has given to the world the semblance of one vast economic community, as Mr. Norman Angell avers. The wealth of the world is rapidly becoming, if it has not already become, one gigantic pool to which all nations contribute by their thought and labor. The war has only emphasized (it did not create) the fact that the wealth of no nation is independent of the economic processes of other nations; and consequently, an absolute sovereignty over its own affairs is impossible to any nation, save at the cost of a complete conquest and control of the world. The psychology of nations being what it is, such a conquest was impossible without resort to military means; and here is one of the deeper motives of Germany's dream of world dominion. The fallacy in the now refuted economic argument to prove that, because of these conditions, world war had become a thing of the past, lay in the fact that the argument did not contemplate the audacious possibility of a single nation in its senses undertaking to master the economic activities of the world. The thing is so preposterous on the face of it, and so barbaric withal, that one is almost excusable for not taking it into account.

As one of the indirect results of the economic revolution, the cultural interests of mankind have been unified to an extent undreamed of before. Newspapers, travel, books, and magazines; scientific, religious, and fraternal organizations; intermarriage, friendship, and the postal union—to mention some of the more obvious agencies of cosmopolitan life—have internationalized the culture of the world. The time has passed forever when a man's nation can be said to be his ultimate community. We have already advanced far into an era of cosmopolitan thought and feeling, from which there is no turning back, and the moral ends of life demand an extension rather than a limitation of the forces that make for world unity and organization. Actually our horizons have been widened, our stars have been lifted some leagues into the blue and we move about in a larger, airier place than our forebears knew. All lands and all ages contribute to our thought, and our obligations are correspondingly world wide.

The type of pacifists who ignore the international problem created by these facts, the blind opponents to war who simply will not see that this war may have been the one way to an indispensable reorganization of the world's politics, the dogmatists who in advance of the event cry shame and failure on all the plans of the United States that allow for our participation in the present war, the partisans whose eagerness to find some fatal flaw in the policies of the present administration renders them incapable of grasping the meaning of the profound changes confronting the world—what are they all but the dupes of a shortsighted provincialism? Granted that this war is a calamity and a disgrace, it certainly makes most for the ultimate peace of the world that we should take part in it. There isn't a hope for the future of civilization, until this war, either now or some time in the future, is fought to a successful conclusion. The war can be said to be the result of a world highly unified in its economic and cultural interests trying to manage its public affairs through a set of antiquated political arrangements that in their mutual exclusiveness and discordant sovereignties are squarely opposed to the main trend of civilization. And this being true, one of two things is sure to follow this war—either another war like it, or a democratic peace in which all nations will be represented—either wars upon wars or some sort of supernational organization in which the rights of the individual and the interests of humanity will be securely grounded. International comity and justice must somehow find expression and embodiment in a world law that all peoples can safely confide in: world citizenship must somehow become a reality: and to this end it is supremely desirable that in the work of reconstruction after the war the right of the individual to liberty, his right to real opportunity, be made the central principle, the supreme end. For the only society that can be said to exist by divine right is the society of all mankind, and that is to say, the individual. The only absolute right is the right to become a person, and that is not so much a right as the moral end that all rights and duties should promote, the spirit and meaning of all law and custom, of all treaties and diplomacies. The great nation—indeed, the great world—is the one that in both its national and international policies, in all its laws and customs, fosters and protects the manhood of its citizens. The great question to be asked of a world, as of a nation, is not, Is it growing wealthier and more populous? but rather, Is it producing better men and women? The greatest obstacle to the effective application of that principle at the present time is the sentiment of national superiority and privilege, the belief that the nation exists and evolves its life by a divine right, the sentiment that prompts the pitiful thought that

if only we had kept out of the war we might have pursued our national ideals to some glorious moral consummation while the rest of the world fought out the issue in which our future was supremely involved.

And yet, it is pertinent to ask, What is to be the programme of reconstruction after the war? Of course we shall be dreamers if we even suggest the basic principle of such a programme; but without a vision, the people perish; and there are some whose assurance of their own sanity depends upon their making the attempt to project into the future the world order for which they have lived in the past. It now seems necessary to project that vision over a gap of years; but that circumstance only renders it the more necessary that we who love liberty look for a world in which the opportunity of the individual to realize and exercise his powers and capacities shall be enlarged. That the world should become in spirit and atmosphere educating, that its end-aim should be the conservation of manhood by facilitating the satisfaction of needs, is implied in the ideals of democracy; the present hour is big with it. The League of Small Nations, the League of Great Nations to Enforce Peace, the proposed Court of Small Nations, the Hague Tribunal developed into, or supplemented by, a Supreme Court of the World, the proposed limitation of armaments and navies, the Council of International Conciliation, the proposed International Court of Arbitration—what are they all but plans for extending and making more effective the principle of democracy, the reign of law? And are they not all dreams? Or plans, which are dreams willed?

Our own favorite dream happens to be an international court, that shall convene immediately after terms of peace have been signed, for the purpose of having arrested to it the malefactors of great power who ordered the invasion of Belgium, the execution of Edith Cavell, the atrocities of Belgian and French cities, the massacre of the Armenians, the use of poisoning gases, the betrayal of the Russian armies in 1916, the sinking of the *Lusitania*, and many other violations of the rules of war. One dreams that the indispensable work of undertaking a legal analysis of modern methods of conducting the world's affairs might well *begin*. It is at least conceivable that secret diplomatic understandings should in time be regarded as conspiracies against the peace of the world, that military acts of precaution should be condemned as criminal, that confiscation and international thieving should be as reprehensible in times of war as in times of peace, and that the rights of individuals should be as sacred in war as in peace. Is it not absurd to think that the world must forever trust to distance and inadvertence to protect in-

dividuals from the depredations of powerful persons? Crimes *are* personal. Neither incorporated bodies nor nations can be properly arrested to any court, but the acts of persons, *i. e.*, the acts of real persons, are ever subject to judicial review. We reject the Prussian closed state, and the Prussian dictum of Trietschke, that there is nothing higher than the state in the external society of man; why, then, should it be so inconceivable that the crimes of state officials against humanity should be dealt with directly; by some world tribunal?

There can be no question, from this point of view, as to the reality of purely political motives and forces. Those who maintain that the only real motives and forces in society are industrial and commercial, and that political relations are fictions based upon an artificial economic institution called property; those internationalist Marxian socialists, who have recently appeared in every country of Europe and America and who would, if they could, revolutionize society on an industrial basis, exaggerate a truth that is as plain as the sun: they exaggerate the fact that the economic interests of mankind have become unified to a degree that makes the present anarchic nationalism of the world seem archaic. They seem to think world peace can be established by erasing from the map the boundaries of states, after eliminating from the world the institution of property. These maximalists with their narrowly economic standpoint imagine that when they have overthrown the existing governments of the world, there will then be no reason for establishing new ones to take the places of the old. But man is a political animal, and an economic society could no more run itself without political control than could a steam engine without its governor. It would thrash itself to pieces in short order. An economic society that was not also a political state would have no means of maintaining order within its boundaries or confidence beyond them; it would have no character that any one could trust, and no capacity of self-defense. It is not property alone that stands in the way of abolishing the state, but wealth, and the necessity of sane and just methods of producing and distributing the same.

The prominence of the economic theory of society and history at the present time is due to the unusual liberty of the modern man in all economic activities. With the dissolution of the Holy Roman Empire and the rise of the modern nation states, and especially with the overthrow of the feudal system, a new industrial and commercial order came into existence, an order founded in individual liberty. Not even in autocratic countries where the ideals of the Middle Ages have lingered longest have governments succeeded in suppressing

entirely the impulse toward industrial liberty. As a consequence, the world has recently experienced a wonderful development of its economic resources and processes. In the height of this development comes the doctrine that economic forces and motives alone are real, and that you have only to reorganize society on a purely industrial basis to inaugurate an era of social justice and universal peace. But the nature of man has not changed; and the lessons of history, sociology, and psychology, in spite of the efforts of Marxists to discredit them, are squarely opposed to this social philosophy. Man is a political animal; his political needs are as deep seated as are his economic needs; and even if the experiment could be tried, it would be found that an industrial society would inevitably develop into a political state. Indeed, there are some who think that any such attempt would end in a dictatorship. The great task of developing a rational political order would then have to be undertaken anew. The kernel of truth in all this maximalism is simply the fact that the political development of the world has not kept pace with its industrial and commercial development. Eliminate the autocracy and absolutism still inhering in the political system of the world, and the yearning of the maximalists will be satisfied.

Private warfare was not suspended, as a method of settling conflicting claims between individuals, by destroying the self-consciousness and self-respect of the individual, but rather by informing, enlarging, and intensifying them; and just as little will international warfare be suspended by emasculating the national consciousness of peoples. Patriotism is one of the finest sentiments, one that it has required millenniums to raise out of the ebb and flow of mere herd instinct and suggestion. It is too valuable a motive force in the lives of men to be sacrificed or subverted. Just as nations are necessary to liberty, so patriotism is necessary to self-control. It is far removed from the uncritical nationalist folly that views the civilization of the country into which one happens to have been born as Civilization. It is a just and reasonable effect, comparable to parental love and religious worship in its constancy, but more reasonable than either when molded and informed by principle. Like a mother's instinctive passion for her child, patriotism is far-sighted and unconscious of sacrifice. It is a safeguard against corruption, and can be made a guarantee of orderly progress. But the chauvinist sentiment of nationalism by divine right resembles it only as blind rage resembles righteous indignation. The voice of the people, the voice of God, remains a false doctrine, until people is equated with humanity.

G. A. TAWNEY.

SOME REMARKS ON "TWO COMMON FALLACIES IN THE LOGIC OF RELIGION"

A PHILOSOPHY of religion can be built up only by the use of a valid logical method. If the logic be defective, the philosophy will be but "dogmatic slumber." It is, therefore, necessary to examine critically the "pragmatic fallacy" and the "fallacy of false attribution," to which Professor Wells has recently called attention.¹

I

The "pragmatic fallacy" arises "from a confusion between the value and the truth of religious beliefs."² That is to say, it consists in passing directly from the value to the truth of a belief, in presupposing that a valuable belief is, because valuable, therefore true. It is evident that Professor Wells intends the "pragmatic fallacy" to mean more than is given on the face of this definition of the fallacy. He evidently means to make a clean-cut separation between logic, the science of truth, and axiology (he does not use the term), the science of value.³ "Truth is definable in terms of consistency among beliefs or propositions, or of correspondence with facts," whereas value is coming to be defined "in terms of organic interests," "desire," or "liking."³ What have organic interests, mere feelings, to do with correspondence with facts? Nay more, in whatever terms value be defined, whether in Mr. Russell's or Mr. Moore's or Mr. Palmer's or, presumably, in any other's whosoever, the distinction between truth and value still obtains. In the value of a belief one can discern no scintilla of light regarding its truth.

There is for Professor Wells a relation between the sciences of truth and of value. In the case of "scientific" beliefs—beliefs about "details of the physical environment"—the truth of any particular belief determines its value; untrue beliefs about facts capable of empirical verification are not valuable. He describes such beliefs as "beliefs that must be true in order to be valuable."⁴ In order to make clear precisely what he means by this statement, substituting his definitions for his terms, we must read, "beliefs that must correspond to details of the physical environment in order to be liked or desired." Can Professor Wells really intend this? The small boy might readily like, desire, and be satisfied by safe ice, even though any particular empirical ice on which he skated might be, like the horse, a vain thing for safety. If we insist that thin ice

¹ This JOURNAL, Vol. XIV., pp. 653 ff.

² *Loc. cit.*, p. 653.

³ *Cf. loc. cit.*, pp. 653-654.

⁴ *Cf. loc. cit.*, pp. 655-656.

lacks biological value; we are using "value" in a sense that has nothing to do with value as liking or desire. Thin though the ice might be, the boy, as long as he could gasp, might still desire to live! Desire-for-life and actual-preservation-of-life or destruction-of-life can not mutually verify or refute each other. On Professor Wells's premises, one can not see why beliefs about physical facts in order to be valuable must be true.

Turning now to the field of religion, he contends that in the case of "metaphysical" beliefs there can be no relation between fact and value; for "metaphysical" objects are not empirically verifiable.⁵ (It is implied that, if verification were possible, value would be, as in the case of scientific beliefs, dependent on fact.) Untrue "metaphysical" beliefs (such as the belief in God, if there be no God) "can have no bad indirect objective effect," but may have "direct subjective effects" of positive biological value. These propositions reveal a shift in the concept of value from "liking," "desire," "interest," or "satisfaction" to a definition that would run somewhat as follows: "A belief has value if it has 'good' biological effects." Value has now become survival-value,⁶ or, more accurately, the-fact-of-aiding-survival.

Let us see whither this has led us. We were originally warned against the "pragmatic fallacy," the inference that a belief is true because it has value. We have now been told that "to have value" means either to-be-desired or to-aid-in-survival. These two concepts are not identical; for while survival is in general doubtless desired,⁷ it might often—and in religion usually does—happen that the valuable belief has no conscious relation to biological survival. "What-is-desired" may be communion with God, or eternal life; the fact that such beliefs aid in survival is precisely a fact, having no relevance to the belief as valuable (*i. e.*, as interesting). Now, we must hold Professor Wells rigidly to the psychological, rather than to the biological, definition; for the latter is concerned only with fact, in his sense, *i. e.*, with physical details. The "pragmatic fallacy," therefore, is the argument that a belief is true because we desire it to be true. It is obvious that here we have a fallacy, a fallacy so obviously fallacious that even the wayfaring evangelist, to say nothing of philosophers of religion, can rarely be charged with committing it.

Lest one accuse me of an ungenerous literalism, I hasten to admit that there is, in a broader sense, a pragmatic fallacy. To infer that the object of any chance belief exists because belief in that object is valuable, or because that object, if existing, would have value—to make such an inference is fallacious.

⁵ *Cf. loc. cit.*, p. 655.

⁶ *Cf. loc. cit.*, p. 655, especially the last sentence.

⁷ *Loc. cit.*, p. 654, note 3.

Nevertheless, the relation between truth and value in the field of religion may be much closer than Professor Wells admits, without being as close as Mr. Schiller believes it is.⁸ For Professor Wells, the complete diremption of fact and value rests on the essential unverifiability of religious beliefs; this rests on the conception of "verifiable" fact as confined to sense-objects; and this in turn rests on the definition of truth as "correspondence with facts."⁹ But his discussion began with two definitions of truth; truth was *either* "consistency among beliefs or propositions" *or* "correspondence with facts." The discussion, as we have found, is based entirely on the second of these alternative definitions, which Professor Wells actually employs as a criterion of truth. The whole point of his criticism of the "pragmatic fallacy" turns on this fact. If the criterion of truth be correspondence with sense-objects, then all value (being mere "liking" or "desire") is irrelevant to truth. But perhaps correspondence with reality is not a criterion of truth at all, but rather what Professor Wells originally called it, the definition of truth. In any event, one who still accepts the view that consciousness exists (James and many contemporaries to the contrary notwithstanding), and is an epistemological dualist, could never admit correspondence with (outer) reality as a criterion. Advisedly, I have changed Professor Wells's word "facts" to "reality," in order to avoid the presupposition that physical objects are the whole of reality. From this standpoint, the first formulation of the definition of truth, as "consistency among beliefs or propositions" (or, let us say, judgments) may turn out to be the criterion of truth. Then we should regard sense-data, not as the reality to which all truth must correspond, but as judgments to be built up into a rational system; many of which, as given, may be, and often are, false, or falsely interpreted. Only by relating any given judgment to the total system of our judgments can we judge as to its truth or falsity.

Let the criterion of truth for our argument be rational consistency and nothing else (*pace* pragmatism). Then obviously only judgments could have the right to be treated as true or false. If there are or could be any states of consciousness not judgment in character, they would have no relevance for truth. They would make no "truth-claim," would have no reference to reality, and could be tested by no criterion of truth. They would be brute data of the mental life.

The crucial question now arises: is valuation a form of judgment? If it be mere subjective desiring (granted the possibility of

⁸ *Loc. cit.*, p. 653.

⁹ *Loc. cit.*, pp. 653-654.

such a state) it may be perhaps only a brute datum. But in proving that value in this sense has no significance for truth, Professor Wells would not thereby demonstrate that value in all possible senses is equally irrelevant. Perhaps valuing is not merely a psychological accompaniment of an independently true or false judgment. It may be itself a way of judging reality. Value may be in some sense objective, or objectively valid. From Plato to contemporary discussion in this JOURNAL, the view has been held by many thinkers that a value is a value, whether I know it or not, and whether I like it or not. Its validity is as objective as the existence of the Great War. Any given value judgment, then, is either true or untrue of the objective system of values, just as any existential judgment is either true or untrue of the objective system of existence.

On this view, reality is a system of validity and existence, of value and fact. If the criterion of truth be rational consistency, then perhaps truth will include both existential and value judgments: and if truth correspond to reality, perhaps reality will possess both existence and value. The "pragmatic fallacy" remains a fallacy in the sense that it would be unsound to argue that any chance value judgment is true merely because it is a value judgment. But over against the "pragmatic" may be set the equally illogical "scientific" fallacy of assuming that only existential judgments are relevant to truth. If a consistent system of existential judgments may be built up, but never completed, so perhaps may a consistent system of value judgments be constructed. Both systems will be true of reality for the sole reason of their rational consistency within themselves and with each other. Philosophy of religion and "the special science of value" have yet a long way to go before the system of value is worked out; and a still longer way, before the relations between the two systems are understood. That there is some relation seems to be a reasonable assumption. "The world of description" and "the world of appreciation" (as Royce calls them) are rational activities of one mind dealing with one reality. In any case, a description of reality is not complete truth until we know the truth about its value; and *vice versa*. The "Sein" and the "Sein sollen," can not be, or at least ought not to be, ultimately dissevered.

Religion will always be more interested in reality as value than in reality as fact. But religious life could never exist, nor could religious logic prosper, on the basis of a complete diremption of truth and value. Höffding, for example, interprets his axiom of "the conservation of values" as meaning that "the content of faith is that fidelity prevails throughout *existence*."¹⁰ Hocking makes "love of

¹⁰ H. Höffding, *The Philosophy of Religion*, p. 216. Italics mine.

reality," "our whole-idea," "the God-idea," and value very closely related, if not identical concepts.¹¹

Hence we can not "content ourselves by saying that unverifiable religious beliefs possess value or disvalue,"¹² for if they possess *true* value they have been "verified" by the use of the criterion of logical consistency. Further, the existential judgment implied in the religious belief may, if it has any relation to our other judgments, be tested by the same criterion. Philosophy of religion can never rest "content" until it finds some consistent way of understanding reality—existence and value—as a whole. "Man's need of metaphysics" can never be met by a veto.

II

Professor Wells discusses also "the fallacy of false attribution," which "arises from the attribution of the so-called religious experience to outside, 'higher' forces in cases where, in reality, the cause of the experience is merely physiological—from 'below' and not from 'above.'" It consists in "the erroneous interpretation of an experience whereby the experience is attributed to an external, divine source in cases where a physiological explanation is adequate to account for the experience."¹³ Professor Wells will probably accept as an amendment the term "psycho-physiological," for physiological causes alone would never make Kipling's hero¹³ see a camel if he had never consciously or "subconsciously" experienced camel.

This fallacy rests on an assumed "either-or." Any fact in human life, Professor Wells takes for granted, is conceivably due either to natural or to supernatural causation;¹⁴ either to psycho-physiological causes or to God. If one, not the other. God, if there be a God, can have nothing to do with phenomena; he must be an "absentee." But the "fallacy of false attribution" is a fallacy only on the assumption of this dualistic deism as the only possible philosophy of religion.

Suppose that we turn from dualistic deism to a different metaphysical hypothesis, at least equally well known. On this other hypothesis, any event in the world of time is capable of being explained from two standpoints: first, the standpoint of its relation to previous events in the temporal series (in which case we have the "phenomenal" cause, say, of a mystical state, in psycho-biological

¹¹ W. E. Hocking, *The Meaning of God in Human Experience*, pp. 126, 129, 136, *et passim*.

¹² *Loc. cit.*, p. 656.

¹³ *Loc. cit.*, pp. 653, 657.

¹⁴ *Loc. cit.*, p. 658. "The natural or supernatural origin . . . is very relevant indeed." Italics mine.

terms); and second, the standpoint of its relation to metaphysical reality (in which case we see the same mystical state as an aspect or activity of the real, or the divine). For such a view it is rigorously logical to say that an event has a psycho-physiological cause, and also that that event is a divine act. The question as to the cause of an event is not the critical question for a religious idealism.¹⁵ Of course every event has a phenomenal cause; equally of course every event is a manifestation, an expression, an act of the divine.¹⁶ The real question is not as to the cause, but as to the value of the event for the religious soul, and objectively for the divine reality. Kipling's camel—"jims" were divinely caused, but were of value only as expressing the rationality of divine law in the matter of stimulants and their effect!

It would follow that the "fallacy of false attribution" is a fallacy only from the standpoint of a positivist who rejects all metaphysics, or of a deist who finds the divine only in lawless interventions in the course of nature. A positivist is under bonds to find the divine nowhere; a deist, to find it only in what can not be accounted for on the basis of natural law. For a theist, or a pantheist, or a religious idealist, say, of Lotze's type, there is no "fallacy of false attribution"; such thinkers would be concerned to warn against the fallacy of confusing phenomenal with metaphysical causes.

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THE VALIDITY OF RELIGIOUS BELIEF

I WISH to offer some brief criticisms of Mr. W. R. Wells's distinction between scientific and metaphysical beliefs.¹ Scientific beliefs, he says, are capable of empirical verification, in terms of sense-experiences which reveal objects corresponding to these beliefs. Such beliefs must be true in order to be valuable, and are valueless if false. For example, the belief that the ice is safe can be verified by stepping on to the ice and finding that it will bear one up: if the ice does not bear the experimenter up, then the belief is not only false, but harmful. Metaphysical, including religious, beliefs, on the other hand, are, according to Mr. Wells, incapable of empirical veri-

¹⁵ This disregards for simplicity's sake all questions regarding freedom.

¹⁶ Even Kant, who normally means by "cause" phenomenal antecedent in time, also uses the term of the transcendental object, "that purely intelligible cause of phenomena in general." (*Critique of Pure Reason*, tr. Max Müller, p. 403.)

¹ Cf. this JOURNAL, Vol. XIV., pp. 653-660

fication, and can not produce harmful objective results. Their effects are subjective only, and independent of their objective truth: in other words, they may be subjectively valuable, and yet objectively false.

This distinction presupposes two postulates, and is invalid if these postulates are false. It presupposes, in the first place, that empirical verification is verification in terms of sense-experience only, that only sense-experience is experience at all; and, in the second place, that whatever furthers the welfare of the physical organism is harmful, and that there can be no spiritual or super-sensuous values. Now, both of these postulates may be true, but I submit that they are not, strictly speaking, postulates at all, and must themselves be verified before we have a right to assume them in our argument. In direct opposition to these assumptions I insist that there are spiritual values which entirely transcend the physical ones, and that if we recognize these the distinction of criteria which Mr. Wells offers falls to the ground. I do not here attempt to prove my assumptions, any more than Mr. Wells attempts to prove his. I merely wish to point out that his arguments ignore the possibility that his assumptions may be too narrow.

It is perfectly conceivable that false religious beliefs may be comforting and even inspiring—may have both hedonic and moral value—and yet at the same time be positively harmful to the spiritual nature. Belief in the reality and beneficence of God may be as spiritually harmful—if, after all, there be no God, or if God be, after all, a maleficent Being—as belief in the safety of ice which is really unsafe may be harmful physically. And, on the other hand, a false “scientific” belief (as, *e. g.*, in the non-reality of pain) may be “subjectively” valuable and yet “objectively” harmful (as, in the case of the example, in hindering a cure of the disease which causes the pain).

The test of the truth of a religious belief is certainly not, as Mr. Wells rightly insists, its subjective value to any individual, but rather its objective value for all normal human beings; and the same is true as regards scientific beliefs. Religious beliefs, furthermore, may, like scientific beliefs, be empirically verifiable—*i. e.*, in future religious experience, as scientific beliefs are verifiable in future sensory experience.

So, the other question of which Mr. Wells has written, as to the source of so-called mystical revelations, is a precisely similar question to that of the source of the supposed revelations of the senses. The alternative is not—Are these experiences subjective or objective, physiological or divine (physical in the case of sense-expe-

rience), from below or from above?—for both types of experience are *at least* subjective and physiological. Rather, the question is, Are they *also* objective and spiritual (or physical, as the case may be)? Professor Coe and Mr. Wells are quite right in stressing the point that the answer to this, if it is to be a philosophical answer, is a matter of after-interpretation: that, in the case of mystical experiences, the *fact* is the experiencing itself, and the belief that God is experienced is a doctrinal *interpretation* of that fact. But let us note two points: (1) precisely the same thing is true of physical experiences; and (2) that it is true in either sense only when we need a *philosophical* justification of our beliefs, for ordinarily both physical and spiritual experiences are accepted at once by the experiencer as valid, the vividness of the experience being taken by plain man and scientist alike as proof of its validity, and the latter called in question only by the philosopher. Both physical and spiritual experiences, then, are verifiable on the same grounds—consistency with one another and with later experiences, reasonableness, objectively valuable results, or what not; and there is nothing any more “false” in “attributing” mystical experiences to God than in attributing sensory experiences to matter, provided the proper tests are carried out when doubt of their validity is suggested.

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REVIEWS AND ABSTRACTS OF LITERATURE

The Continuum and Other Types of Serial Order. EDWARD V. HUNTINGTON. Second Edition. Cambridge, Mass.: Harvard University Press. 1917. Pp. 82.

This book, the first edition of which appeared in 1905 as a reprint from the *Annals of Mathematics*, has long been the chief text and reference book of those American students who desire an acquaintance with the important subject of the theory of aggregates. It is, therefore, very pleasant to see the old edition (which was out of print, and in certain matters, such as those involving Zermelo's axiom, pertained to a theory which since then has undergone notable developments) supplanted by what is probably the handiest and most up-to-date brief treatment of the subject in existence. From a purely material point of view, the present neat manual is a great improvement on the large flimsy paper-back that constituted the first edition.

Chapter I is devoted to classes in general. There is no attempt

to enter into the more abstruse logical questions that arise in this connection, but all the definitions are carefully framed, and express the intended notions as well as is possible without explanations of a complicated character. Brief mention is made of relations and operations, after which the definition of systems is given. Huntington, after his accustomed manner, defines a system by mentioning not only its organic relation, but the class of entities this organizes. This is convenient for pedagogical purposes, but is essentially redundant, since, in specifying the relation, one has already determined the entities with which it is to concern itself.

The next chapter, which treats of the general properties of series, follows the usual method of handling the subject. Like the entire book, it contains a large number of good examples which serve both to render clear to the reader the exact meaning of the postulates and definitions employed, and to develop the independence and consistency proofs for the system. The purely mathematical examples are always satisfactory, but those drawn from other fields occasionally involve unwarranted assumptions. On page 16, the temporal order, the order of sensations arranged according to their intensity, the causal order, and the order of moral values are all given as examples of series, in the technical mathematical sense. The serial character of the temporal order has been questioned by A. A. Robb¹ on grounds connected with the theory of relativity, while the existence of sensation-limina should make the serial character of sensation-intensity extremely doubtful. Similar remarks apply to cause and moral value.

Chapter III concerns itself with discrete series. The treatment is original in that Dedekind's postulate is substituted for the property of permitting mathematical induction in the definition of a discrete series. The property of inductivity is proved in a simple and interesting manner.

In Chapters IV and V dense denumerable and continuous series are discussed after the manner of Dedekind rather than that of Cantor, although the linear continuum is distinguished from other varieties, and the definitions of the Cantorian theory are related to those of Dedekind. Chapter VI contains a very interesting discussion of what are in the true sense continuous series of more than one dimension—series which are continuous in Dedekind's sense, but not linear. Such series are carefully distinguished from the multiply ordered classes which are not, strictly speaking, series at all.

The last chapter, Chapter VII, is devoted to the theory of well-ordered series. It avoids all those dangers which are due to the ease of unwarily introducing Zermelo's axiom without recognizing

¹ *A Theory of Time and Space*, Cambridge, 1914.

it. However, the statement in paragraph 82, to the effect that " . . . the various types of well-ordered series, when arranged 'in the order of magnitude' . . . form a series with respect to the relation 'less than,' and as Cantor has shown, this series is itself a well-ordered series," is one of the horns of Burali-Forti's dilemma, and has been denied by Whitehead and Russell, on grounds connected with their theory of types. The chapter ends with Hartog's interesting reduction of the principle that any class can be well ordered to the principle that of any two classes, one is similar to part or the whole of the other. Though there is no misunderstanding involved, it is a trifle misleading to call this, as Huntington does, a proof of the former principle.

The book is not a piece of original research in the large sense, and does not claim to be, though it contains many pretty examples of Professor Huntington's mathematical tidiness; accordingly it pays much more attention to the manner of presenting the subject than do the original monographs from which it draws, for its purpose is rather to clear old trails for the beginner than to blaze new ones. Though there is no attempt at dealing with the various logical and mathematical puzzles which make this field so interesting to the philosopher, one will find here a mass of information, presented in a manner intelligible to the non-mathematical reader, which will enable him to follow the more abstruse discussions of these matters in other works with far more ease than would otherwise be possible.

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JOURNALS AND NEW BOOKS

THE AMERICAN JOURNAL OF PSYCHOLOGY, July, 1917.
From Home to the Charge: A Psychological Study of the Soldier (pp. 315-348): CHARLES BIRD.—The citizen in becoming a soldier must forget himself and lose his social identity as he enjoyed it in private life. The camps cause him to lose his individuality and self-assertion. The intense changes make the soldier primitive and often vulgar. Fear is forgotten in the struggle for self-preservation, but possesses the soldier in the retreat, which often becomes a panic. The social psychology of war is discussed. Bibliography. *Visual, Cutaneous, and Kinesthetic Ghosts* (pp. 349-372): P. F. SWINDLE.—Visual, cutaneous, and kinesthetic ghosts are explained in terms of after images of long duration with elements of imperfect perception. *Psychological Tests for the Authorship of the Book of Mormon* (pp. 373-389): WALTER FRANKLIN PRINCE.—If there were no historical records about the origin of the Book of Mormon, psychological

tests show it to be written by Joseph Smith between 1820 and 1834. The manufactured names and the nature of the subject-matter clearly show that Smith's mind was taken up with the affairs of William Morgan and his attack on Masonry. *Laboratory Tests of Anger, Fear, and Sex Interest* (pp. 390-395): HENRY T. MOORE.—Fear is the most disturbing factor. *Retention of Skill after Lapse of Practice: Simultaneous Reading and Writing* (pp. 396-408): JUNE E. DOWNEY and JOHN E. ANDERSON.—The subjects showed the retention of the capacity to maintain the reading and writing processes after a lapse of two years. *A Limen Color Mixer* (pp. 409-418): A. P. WEISS.—An apparatus for making many accurately determined color combinations available. *The Formation and Retention of Associations among the Insane* (pp. 419-435): CLARK L. HULL.—The retentiveness among the insane is not disturbed, but the power to form associations is greatly impaired. *Minor Studies from the Psychological Laboratory of Cornell University. On the Psychological Response to Unknown Proper Names* (pp. 437-443): E. M. ALSPACH.—*The Psychological Basis of Appetite* (pp. 443-453): E. G. BORING and AMY LUCE.—Stomachic sensations are not always present in appetite. *On the Computation of the Probable Correctness of Differences* (pp. 454-459): EDWIN G. BORING. *Book Notes.*

JOURNAL OF EXPERIMENTAL PSYCHOLOGY. August, 1917. *A New Chronoscope and Fall Apparatus* (pp. 253-363); PAUL E. KLOPSTEG.—A physicist describes a simple form of chronoscope specially suitable to the measurement of intervals up to 500 sigma, though adaptable to greater or smaller ranges. As a means of adjustment and control of the scale readings, a new fall apparatus is described which accurately "measures out" to the chronoscope any time interval within the range of the latter. *The Estimation of Distances by Sight and Passive Touch: Some Investigations into the Evolution of the Sense Touch* (pp. 264-288): ARTHUR B. FITT.—Among other conclusions the author states that "those parts of the skin which have very small space-thresholds overestimate two-point distances, the overestimation gradually decreasing with increase of the threshold until the indifference-point is reached where the estimation is correct." *Hand-Tongue Space Perception* (pp. 289-294): C. N. WATERMAN, JR.—The fact that when the removal of a tooth or other dental work is explored by the tongue, the cavity seems unusually large, led to the question as to whether areal stimuli on the tongue are overestimated as compared to the same stimuli on the hand. Experiments showed that perception of size is more accurate with the tongue than with the hand: underestimation for the tongue 18 per cent., for the hand 27 per

cent. The A.D. for each is about the same. Individual variations in estimations of sizes are greater for the hand than for the tongue. *Some Areas of Color-blindness of an Unusual Type in the Peripheral Retina* (pp. 295-303): C. E. FERREE and GERTRUDE RAND. — A search for spots on the peripheral retina was made. While similar in a general way to the case described by Schuman, there were points of difference. *The Progressive Error of the Smedley Dynamometer* (pp. 304-313): SAMUEL C. KOHS. — Unless corrected, the dynamometer readings do not accurately register the force applied. The error is a constant and may easily be determined. The amount of error increases by arithmetic progression as the force exerted increases. *Discussion: The Tilting Board and Rotation Time*: HENRY H. GODDARD.

Peterson, Joseph. *The Effect of Length of Blind Alleys on Maze Learning: An Experiment on Twenty-four White Rats*. Behavior Monographs, Volume 5, Number 4, 1917. Boston: Henry Holt and Company. 1917. Pp. 53.

Webb, Louie Winfield. *Transfer of Training and Retroaction: A Comparative Study*. Psychological Monographs, Volume XXIV, Number 3. Princeton, N. J.: Psychological Review Company. 1917. Pp. 90.

NOTES AND NEWS

THE Brick Row Book and Print Shop of New Haven was offering recently for sale a copy of the *Life of Reason*, by George Santayana, in the volumes of which the author had written various prefatory notes, dated Cambridge, April 18, 1907. Through the courtesy of Mr. Hackett, the JOURNAL OF PHILOSOPHY is able to publish some of these.

REASON IN COMMON SENSE

A Short Preface

THE first impulse to write this book came to me in 1889, on reading Hegel's *Phaenomenologie des Geistes*. There, it seemed to me, was a great idea spoiled by the sophistry and mythology that encumbered it. The great idea was to review the history of the human mind, picking out certain crucial episodes in it, and showing how the insights and habits then gained had contributed to our present moral constitution. The sophistry and mythology lay in supposing that such selected episodes must form a necessary dialectical chain, must make up the whole evolution of the world, and must be governed miraculously by their ultimate issue.

It occurred to me, then, that a more honest criticism of progress might be based on a frankly human ideal, applied to experience conceived in its natural historical setting. The project, however, took shape slowly, and it was not until 1896, under the influence of my first Platonic studies, that I made a beginning in actual composition.

This is not, therefore, a work of metaphysics, nor of history, nor even of psychology. It is a work of criticism. Its object is not to trace the connection or define the nature of all things, but merely to estimate the value of some of them—those that chiefly concern civilization. Yet, in order to criticize, it is necessary to understand and to be sympathetic; and for this reason I have been often led to reconstruct and to analyze the historical or psychological episodes of which I wished to estimate the value. The work of criticism has consequently become, in method, a work of imagination. It is as such only that, in its turn, it ought to be judged.

REASON IN RELIGION

Paganism Inevitable.

A rejected passage written for "Lucifer"

(Athena addresses Hermes)

Brainsick men

Need brainsick gods. Some spirits crave our forms;
Others are dark with their intestine storms
And can not relish beauty. Even then,
When wise men honoured us, the vulgar heart
Worshipped itself. In vain the temple stood
Aloof in the dim silence of some wood
Oracular to mortals, far apart
From hot disquiet; in vain the god, well-wrought
By hands I guided, smiled superbly down.
What might a Zeus be to a tyrant's thought?
An Aphrodite to a sluttish clown?
They sacrificed for gain: one lamb they brought
To save a thousand, hallowing meat and wine
Vainly with words, and lightening not their cares.
Men pray for many things, and still they pine,
But to grow better is the best of prayers
When in our presence mortals unawares
Wax to our stature and become divine.
Therefore I mark not closely how the blind
Picture our nature. It is not their mind
That gave us being. They invoke us still
For in their bosoms stirs unquenchable will,
And brooding silent at Jehovah's shrine,
Empty and imageless, the warm heart paints,
Beyond invisible gods and haggard saints,
The likeness of thy beauty, or of mine.

REASON IN ART

Reply to a Criticism

Some of my friends have kindly observed that when I was younger I used to be more idealistic and more a friend of the arts. To explain this deterioration in my genius I transcribe the following verses, addressed by Apollo to Venus in an unpublished play of mine called *The Marriage of Aphrodite*.

*Apollo in Love**or the Poet Lost in the Platonist*

The stern palestra moulded well my youth,
That I might wring from the taut-corded lyre
Music and truth
To lighten souls, and move to holy ruth.

Much did I wander through the Delphic glen
Where the rapt sibyl strained to catch my song
Through field and fen
Eurotas watered, nurse of perfect men.

And through all lovely lands, where beauty fed
The eyes with joy, and left the heart secure,
Which only bled
When my sweet boy, my Hyacinth, was dead.

Till, goddess, seeing thee, my soul was fired
With might of all the beauties ever seen,
For all conspired
In thy one form, divine and all-desired.

In thee I found all friends, all gifts, all power
Of music, and all harmonies—in thee,
With richer dower,
My Hyacinth came back, immortal flower.

But that, alas, which should my psalm inspire
Confounds me quite, and leaves me dumb, abashed;
So great desire
Chokes my faint voice, and snaps the pulsing lyre.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

VALUE AND CAUSALITY

THE exchange of views¹ between Professor Urban and Mr. Schneider has impelled me to take from a pigeon-hole a paper written originally as a contribution to the discussion between Professor Sheldon and Professor Perry at the New Haven meeting of the Philosophical Association in 1913.² Some changes and additions have been made to connect it with the issue that has been raised by Professor Dewey's theory of value as it appears in his *Studies in Experimental Logic* and which appears to be the point on which Urban and Schneider amiably but vigorously disagree.

It is not surprising that the discussion of values tends to become more and more complicated. Four years ago at New Haven the issue was very clear-cut; it might have been named the place of realism *versus* the place of individualism in a theory of value. At that time realism was still a thing of experiment and adventure, while idealism, or whatever you like to call the type of thinking that still took subjectivism into account, was beginning to look decidedly conservative, and one of the interesting features of the meeting was that the realistic paper was read by one supposed to be, whether rightly or wrongly, an idealist (*pace suo*), while the position in which subjectivism is supposed to survive was defended by a militant realist.

Of these two papers, the former, by Professor Sheldon, gave a definition of value in which the ego, to use a term now sufficiently discredited to be safe, is entirely superfluous. Professor Perry took the opposite ground and assured us that "it is held at the present day with something approaching unanimity that value in the generic sense has to do with a certain constant called bias or interest."³ It is because this old issue crops up, as I think, in the Urban-Schneider discussion and it is because further discriminations are usually possible, and because that meeting at New Haven was a very pleasant occasion, that I revive its problem.

¹ This JOURNAL, Vol. XIV., pp. 701 and 706.

² This JOURNAL, Vol. XI., pp. 113 and 141.

³ *Loc. cit.*, p. 149.

I fancy we need no longer feel alarm at what may seem affinities with either realism or idealism. The traditional flavor of "subjective" and "objective" should not impel us to dialectical preferences. The out-door habit of mind has become so natural that the old bogey of labels is rather attractively amusing than otherwise. The above reference to a shop-worn antithesis is, accordingly, only to notice that it has found its place on the shelf of metaphysical curiosities.

As the more recent of the discussions I have alluded to began with a paper by Mr. Schneider, I will venture a word or two about that. Mr. Schneider's point of view is that of what might be called a pragmatic theory of value. This point of view is stated at some length by Professor Dewey in his article⁴ "The Logic of Judgments of Practise." Now this context limits the range of the discussion very precisely. Professor Urban could, I think, easily have pointed out that while many things about value do illustrate the logic of judgments of practise, other things do not, but just because they do not, they can not be recognized in a theory of value that is part of a theory of judgments of practise. In so far as value facts come within the region of intelligent behavior, Mr. Schneider's account is, I think, entirely acceptable. But may there not be much of value that falls outside that region? Mr. Schneider appears to assume that whatever is valuable is valuable for something. Of course whatever is valuable in the context of judgments of practise must be valuable for something, but surely many things are prized and enjoyed without reference to any utility or end or completed situation. I do not wish for a moment to dispute Dewey's and Schneider's analysis; I do, however, point out that their analysis applies only to the subject-matter that instrumentalism applies to, and this leaves out of account, I take it, one whole half of experience. I mean that instrumentalism, and its corollaries, applies to what has reference to the future; I do not see how it can apply to what we call the present when we disregard its causalities and potentialities. What I have in mind is the old contrast between beauty and use. Instrumentalism certainly suggests causality made use of, and the instrumentalist account of value, in the desire to escape the harmless bogey of subjectivism, tends, I think, to equate value with causality. The old problem as to the necessity of an appreciating ego in a value-generating situation seems to be making for the shelf too, but my paper was written when that problem might still be occasionally mentioned, and so my own remarks are conceived in a confessedly reminiscent vein. I shall use the word value in a sense quite the opposite to that preferred by instrumentalism, but a detail of usage is not, I

⁴ This Journal, Vol. XII., pp. 505 and 533; and *Experimental Logic*, pp. 349-389.

take it, the point at issue, and whether the word "value" is given one meaning or another no relevant fact will be modified, and the circumstances alluded to ought not to be obscured.

Instrumentalism is, it seems to me, realistic in an empirical or phenomenal sense (these terms imply nothing metaphysically), and idealistic in the sense that it is interested in human situations, activities, and methods. In the former respect, the instrumentalist theory of value is somewhat in line with Professor Sheldon's paper mentioned above, and in the second it moves in the atmosphere of Professor Perry's paper. While an instrumentalist may claim, I think, that the problem of the presence or absence of an ego does not concern him, he may claim this because he has already decided the question and decided it in favor of Professor Perry's position. The instrumentalist, as such, is primarily interested in the data of what I call below an ego-centric situation, but as an instrumentalist he is somewhat too indifferent to the non-instrumental data of that situation.

The idealistic thesis that the landscape is a function of the ego is familiar and historically intelligible. The thesis of the realist that the ego is superfluous for the landscape is equally familiar. It may be worth while to remember that, in any case, the ego and the landscape often do go together, and that when they do, the situation is not quite identical with what it is when they do not. Using Professor Perry's very neat adjective, the more complex of these two might be called an ego-centric situation. I need not insist that the ego-centric situation is an entirely empirical one with which no one of us is unfamiliar. The originality of Professor Sheldon's paper lay in his effort to emancipate value from ego-centric situations. Let us start, therefore, without assuming any ego, bias, or interest.

Let us conceive, imagine, or define a section of nature where there is nothing that can be aware of a preference or an aversion, no sentient organism that can feel pleasure or pain, comfort or discomfort, or any impulse whatever. The seasons come and go, vegetation thrives and starves in response to rain, sun, and drought. Everything happens that conceivably can happen except that nothing happens to an ego. Does not the term causality cover all the influences here of one thing on another? We can, to be sure, say that the rain is good for the ferns and desirable for the moss, and that the drought was very bad for the wild flowers. We can apply the terminology of value as much as we like and we shall not be misunderstood, for it will be clear that what we are talking about is causality. And it will probably be always more natural to say the rain is good for the crops than to say it is good for the weeds. In a strictly realistic world, however—realistic in the sense that it con-

tains no ego-centric references whatever—does not the word causality describe all the cases in which one thing can affect another? However we may specify or complicate cases of causality, are they, under these conditions, any less or any more than causality?

Now when we introduce a creature subject to bias or interest, impulse or preference, is anything new introduced, and what is it? Does something now happen that did not happen before? If there is now something new, the ego-centric situation calls for a new word, a word which, just because it denotes something that world number one did not possess, should not be applied to cases of world number one type. Things are not now merely causally effective; they are disagreeable and agreeable, sought or shunned for themselves and their effects.

If now something new is introduced when *bias* or *interest* is introduced, if the relation of things to this bias or interest is a new relation, that is, a relation to a new term, it is, of course, merely a question of terminology whether we indicate this new relation by one word or by another. Suppose we extend the term "value" to mean causality under certain definite circumstances not including necessarily any subject of interests or preferences; the word value can then not be used to designate the new relation, and another word will have to be found to do so. Nothing will have been done except to identify value with certain cases of causality and to adopt some other word to do the work that naturally belongs to this one. I can not help concluding, then, that the presence of *bias* or *interest* defines a type of situation where something happens that is not a case of causality merely. What happens is that things acquire value, and if the relation of things to interest and preference can not exist apart from ego-centric situations, what virtue can there possibly be in seeking to ignore this fundamental circumstance?

Another commonplace of the subject (as I had supposed) is the distinction between "intrinsic" and relative values. We experience, enjoy, or endure the present, we anticipate and seek to control the future. These may, to be sure, be viewed as different aspects of a complex present. The present is intrinsically as good and as bad as we find it, and it contains the resources, the causative or relative values that enable us to treat the future as an object of enterprise. This terminology should, perhaps, not be taken too literally; it should not be taken to mean that we value values and not things. Things are complex and acquire value from one property or another; when they do so they may be regarded often enough as individual instances of this property. But within the ego-centric situation intrinsic or immediate values may depend upon all sorts of circumstances, and a classification of them may be indefinitely complex. It is in-

trinsic values that are "matters of taste," the kind of thing about which disputing is likely to be futile and argument banal. I suppose no one will deny that there are individual peculiarities of taste, and it is quite certain that such peculiarities are most respected by those who have gradually achieved a capacity for varied appreciations.

The causalities of world number one persist, but they no longer influence merely indifferent facts; they are or may be causes of value and so acquire value from the intrinsic character of their consequences. The shortest and simplest word to indicate this new relation is, perhaps, the word "use." Is there anything singular in saying that "use" comes in with the "ego-centric" situation? With use, however, we are in a region of values where discussion is not irrelevant, because causality does not depend upon the ego-centric situation; only the value of causality depends upon that. The ego-centric situation added something to world number one; it did not take anything away from it. Man can not, of course, live in any portion of nature without being seriously interested in the mechanics of his environment, and we can and do study and debate the mechanics by means of which intrinsic values can be obtained. But what is thus studied and debated is mechanics and causality, not value in the strict sense.

Is one more interested in the quality of the present or in the potentialities of the present? The wise man is, no doubt, interested in both. Nevertheless, most of those that are really interested in either are not, as a rule, altogether "wise." Some there are who view things as a vision; others see in things the instruments and the raw material of change. The distinction above insisted upon, that of enjoyment *versus* use, may seem to be overcome in the fact that in actual experience the things that are useful or dangerous have in addition some esthetic quality, or may have; also that the esthetic value of anything is complicated by the future consequences it may reasonably be expected to produce, and that it is a corrupt taste,⁵ or at least a crude and inexperienced one, that is indifferent to a thing's "relative" value. This is, however, only to point out what is as obvious as anything else, namely, that things are complex and bear upon the future as well as exist in the present, and that taste is capable of education that does not contradict intelligence, but fortifies it. And it is equally clear that a community should make its instrumentalities esthetically tolerable, for if the present is never possessed, instrumentalities are a futile pretense. It is to the intrinsic values that sacrifices are ultimately due. In a greater or

⁵ Santayana in *Reason in Art*, p. 207.

less measure we are continually mutilating the present for the sake of the future, and compromising the future for the sake of the present. That is, we are constantly sacrificing value to use and use to value, and what makes the difference between these so real and so well worth marking is the fact that both the present and the future are such empirical actualities. All this may not be worth dwelling upon, but the distinction ought to be maintained in subsequent generalizations.

The distinction between value and causality will not remove or complicate the discussion of any genuine problem. Only such problems as might result from equating value with causality will be extinguished, and it is the apprehension that artificial problems might be created by a definition that must account for all this display of shop-worn goods.

What I have called relative values (instrumental values might be a better term) may seem to be a special case of those values that depend upon presuppositions. I may value and use a disagreeable medicine because it will cure a cold. I may like the Mona Lisa because Da Vinci painted it. These are, to be sure, both presuppositional values, but to class them together is to make a logical rather than an empirical identification. It seems to me their difference is greater than their resemblance. If I may venture to propose a pair of terms, I would suggest independent and dependent values; instrumental values would then appear as a particularly important class of dependent values. Dependent values are good for what can be gotten out of them, and there is nothing startling in saying that independent values are good for nothing. That does not mean that they have no value; it means only that they are the type and source of all value. And if I may repeat, the distinction between independent and dependent values does not in the least imply that things do not have both together. So many things are agreeable but harmful, disagreeable but beneficial; the attitude of esteem is so often spontaneous *and* complicated by various considerations.

Any one who studies the problems of value is likely to approach the topic with a dominant interest in either esthetics or ethics, an interest rather in what I have ventured to call the quality of the present or the potentiality of the present. The difference marks two temperaments that are likely to misunderstand each other unless the distinction between independent and dependent values is kept clearly in mind. Is truth a value? Perhaps. If we say that it is, I suppose we must mean that particular propositions have the one sort of value or the other, or both. It is when propositions acquire independent value that discussion becomes difficult. Certain it is

that one who comes to the subject chiefly from esthetics will give ample recognition to what I call independent values. This happens to be the case with the present writer. I do not know that it was the case with Professor Perry, but in his paper,⁶ the strong emphasis on independent or intrinsic value is accompanied by an illustration from the field of art. And when Mr. G. E. Moore is cited as denying the necessity of interest, the reference is to a work on ethics.⁷

This fact of special preoccupation leads to another consideration, which is that when a definition of value is attempted, the chances are that it is a case of some one seeking light in one direction or another, and it would usually be helpful to know in which direction the definition is intended to lead. For where the interest is genuine and the subject complex, where one is really thinking one's way ahead, it is not likely that one seeks to make a definition and let it go at that. There will be farther work to do, a great deal; the definition is only getting started. I should expect that those who are more interested in the potentiality of the present, in the control of situations by intelligent behavior, would take very kindly to definitions of value of the type proposed by Professor Sheldon. "Given any tendency, in dead nature, in living organisms, in conscious minds, which presses toward a certain end; any other tendency that furthers this is for it a good, and any that resists it is for it bad."⁸

A definition like this lends itself very well indeed to the interests of those engaged upon that aspect of experience called the future, but it is entirely useless to those engaged upon that other aspect, no less real, called the present. And in the interest of candor, I may add that the view I have stressed received such meager formulation as I have given it, not in the context of ethics where the ideas of intelligence, control, and direction are dominant, but in that of esthetics where one topic of empirical importance is the education of discriminating appreciation, the attainment of progressive connoisseurship, that possession of the present without which it is hard to see how there can be a real possession of anything.

It is only in the field of independent values that the great battles of taste can take place. One generation often hardly understands another. What would the public of Haydn have said to the music of Strauss? But the question of the comparative efficiency of different methods to bring about an objective change produces not a storm, but an experiment.

The emphasis upon independent values may seem, at first, em-

⁶ *Loc. cit.*

⁷ *Loc. cit.*, p. 154.

⁸ Professor Sheldon's article, p. 121.

barrassing for philosophy, for philosophy is committed to discussion. Against that emphasis there is, says Professor Perry, "perhaps one fundamental motive after all; the desire, namely, to discover a criterion by which superiority or inferiority shall be assigned to values themselves—the desire to justify a criticism of the natural or empirical values. It seems to be necessary to provide for a scale or hierarchy in which inclination shall be subordinated to duty, impulse to a 'norm,' or enjoyment to an ideal."⁹ And elsewhere (p. 155): "The objectivity or commutability of judgments of value in some sense must be saved, not for the benefit of those debating societies, for which he (Santayana) has so poor an opinion, but in order that we may read and enjoy essays like his own, and understand him even when he says 'that good is not an intrinsic or primary quality, but relative and adventitious.'" But what are the values that can be justified or criticized? Evidently values of instrumentality. And what are the judgments of value that have any objectivity that can be conserved? Clearly, it would seem, judgments of dependent value, judgments which result from a consideration of consequences. But independent values are, so to speak, the premises of specific value syllogisms. They can not be criticized while they remain premises; the experiences that contain them must be construed from the point of view of their consequences, that is, they must be taken instrumentally, with reference to a future. Independent values can not be discussed; this is what gives a certain effectiveness to the sort of popular "pragmatism" that seeks to insure anybody's religious preferences. "For as Moore points out, if each party to the discussion is referring to his own interest, no two can ever be referring to the same thing. This is the genuinely vicious sort of relativism which puts an end to discourse, and is contradicted in the very act of generalizing it."¹⁰ The relativism is certainly there, but it is troublesome only for those who want to treat an independent value as though it were a dependent value. What we can do is to call attention to the things or to the aspects of things which have for us independent or intrinsic value in order to see if it will not then happen that the value is recognized. If the bias, or interest, or sensitive organization is the same or sufficiently similar, then the valued object is in practically the same relation in each case. It seems to be the slightly intolerant assumption that there is a definably normal type such that its values and preferences are normal and authoritative. This essentially academic ideal is a hard one to get rid of, especially, I suspect, for those of us whose business is teaching.

⁹ Professor Perry's article, p. 156.

¹⁰ *Loc. cit.*, p. 154.

Santayana puts the case for the cautious souls when, writing of Shelley, he says: "The question for Shelley is not at all what will look nicest in his song; that is the preoccupation of mincing rhymsters, whose well is soon dry. Shelley's abundance has a more generous source; it springs from his passion for picturing what would be best, not in the picture, but in the world."¹¹ What more important subject of discussion than what would be best in the world, and who having the mission to discuss, criticize, and examine all things would not be likely to begin by assuming that all things are subject to discussion? If, however, value depends upon relation to an interest, if it can arise only in an ego-centric situation, values that are achieved, accomplished, or arrived at depend upon a term that varies from moment to moment. The curious thing is not that people are so different, but that they are so much alike.

May not one circumstance that makes the subject of values difficult to discuss without confusion be this, that many values are such intimate things? Experience is shot through with values; they illuminate it with an iridescent subtlety; perhaps we know more about them than about anything else, more than we can easily put into words or more than we want to. It would not be surprising if the more elusive qualities of life did not lend themselves unreservedly to the method of definition.

Professor Dewey in his account of practical judgments is describing a cognitive activity, and he restricts the word cognitive in the way that is one of the characteristic features of instrumentalism. This sharper definition of cognition gives us, I believe, a really good and fruitful distinction, and the purpose of this paper is to insist upon it, noting, however, that it involves what a Hegelian might call "its Other," and that the total context, that instrumentalists so properly remind us of, is not irrelevant. The "Other" to which I chiefly attend, and to which acts of valuation refer, is not cognitive experience at all, in the sense (I think the right one) in which instrumentalists use the word. Also instrumentalism is more fairly and intelligibly stated in terms of verbs than in terms of nouns. One is reminded of James's metaphor, the flights and perchings of a bird. The perchings are no less of the total context because instrumentalists are interested chiefly in the flights. Professor Dewey states candidly that his topic is the cognitive act of evaluation, and he would (rightly, I think) like to avoid the word value altogether. He is explicit in recognizing what I call immediate, intrinsic, or independent values. "Only a prior dogma to the effect that every conscious experience *is, ipso facto*, a form of cognition leads to any obscuration of the fact, and the burden of proof is upon those who

¹¹ *Winds of Doctrine*, p. 163.

uphold the dogma."¹² But though that part of the subject to which instrumentalism applies, *viz.*, the field of cognitive evaluations, is best described in terms of verbs, the points of repose, the non-cognitive "perchings" seem to have an affinity with the more static substantives. To ask a question about non-cognitive experience, expecting in the reply a statement of that experience's cognitive aspect, is just the *petitio* that Professor Dewey will not have.

In this whole matter I have done no more than expand upon a sentence or two in Santayana's *The Sense of Beauty*: "Evidently all values must be ultimately intrinsic. The useful is good because of the excellence of its consequences; but these must somewhere cease to be merely useful in their turn, or only excellent as means; somewhere we must reach the good in itself and for its own sake, else the whole process is futile, and the utility of our first object illusory" (pp. 28-29). Also: "Values spring from the immediate and inexplicable reaction of vital impulse, and from the irrational part of our nature" (p. 19). Readers of the same author's *Reason in Art* may have been surprised that what he says about intrinsic values in the above passage from the *Sense of Beauty* receives no emphasis in the later work. Its title, however, indicates the subject-matter of cognitive valuations, whereas the earlier book dealt with the non-cognitive aspect of experience. The *Life of Reason* is a work in ethics, while the *Sense of Beauty* is a work in esthetics. Such separations exist, of course, not in life, but in literature, and so an instrumentalist might protest that it is a distinction with an intellectual purpose. All I ask, however, is that experience recognized as non-cognitive should not be given instrumentalistic responsibilities.

Now Professor Dewey, whose pages on "Judgments of Value" I have had particularly in mind, does not confuse what I have called dependent and independent values. He begins by warning us against that confusion. He observes "that contemporary discussion of values and valuation suffers from confusion of the two radically different attitudes—that of direct, active, non-cognitive experience of goods and bads, and that of valuation. . . ."¹³ He points out that "'to value' means two radically different things; to prize and to appraise; to esteem and to estimate; to find good in the sense described above (independent value) and to judge it to be good, to know it as good,"¹⁴ *i. e.*, to judge that it is good for reasons that can be adduced. Professor Dewey's account is complicated a little by its relation to a discussion in epistemology. He chooses, as any

¹² *Essays in Experimental Logic*, p. 351.

¹³ *Loc. cit.*, p. 354.

¹⁴ *Loc. cit.*, p. 354.

one has a right to do, to tie the word value up to a cognitive act called valuation, but he states explicitly what he is doing, and I see no excuse for misunderstanding. But by so doing, does not the word value become synonymous, in the instrumentalist presentation, with the word use. Now if this is true, if the instrumentalist means use when he says value, why not employ the simpler word, particularly if he (and I think he is right) feels that the word value has become infected with many artificial suggestions? When a word is thus compromised, it is well to drop it if possible, and find another. Let us try the experiment of substituting the word use for the word value in the instrumentalist account and see what we get. It seems to me that we get a statement of precisely what the instrumentalist means, but a statement with which no one would disagree. "My theme is that a judgment of value is simply a case of practical judgment, a judgment about the doing of something."¹⁵ Value occurs when we face the question, What things or methods have the value of utility under the circumstances? That is, the exposition begins by limiting the values discussed to cases that are cases of judgment, in the instrumentalist's sense. I can not help feeling that when we say "use," as well as mean it, we say something equivalent to the proposition "utility is usefulness" which no instrumentalist would call a judgment at all.

In the above statement of my own, written for the most part three years ago, I attach value rather to what is not judged at all, but is independently esteemed, appreciated, or endured. This is in agreement with Aristotle's notion of the good as that with reference to which instrumentalities are selected. It is, if you like, a verbal matter, but aside from purposes of moral edification, there is as much reason for characterizing value by irresponsibility as by specific responsibility. The upshot of it all is that the problems of value, wherever we attack them, take us quickly into a region of experience, to which instrumentalism was never intended to apply, and where instrumentalists can not, as such, easily follow the lead of the subject-matter. Nor does it follow from this that rival theories of value are any better than instrumentalists think they are.

The city of Syracuse (New York) has a very beautiful institution. The state fair is held there every autumn, and on the evening of the last day there is a parade of all the city's children. The people of Syracuse regard this parade with an almost passionate affection. They begin to take their places on the curb a long time before the procession begins. It seems quite natural to say they value it supremely; to ask a citizen of Syracuse, while the children were passing, what it was good for, wherein the value of the spec-

¹⁵ *Loc. cit.*, p. 358.

tacle lay, would, I fancy, seem almost blasphemous. Does value attach really to things like this or to the means used to bring them about? Of course it is a verbal question, but it is a question that takes us to considerations where instrumentalism is no longer a sufficient point of view.

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SOCIETIES

THE TWENTY-SIXTH ANNUAL MEETING OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

THE twenty-sixth annual meeting of the American Psychological Association, in affiliation with the American Association for the Advancement of Science, was held at the Carnegie Institute of Technology, Pittsburgh, Pennsylvania, on December 27, 28, and 29. Despite the absence of many members now in the service of the government, over one hundred psychologists were in attendance. The interest in applied psychology, manifested both by the formal programme and incidental discussions, was the most characteristic feature of the session, and in particular the interest in the work of psychologists for the nation at war was paramount. The presence of Major Robert M. Yerkes, chairman of the committee of examination of recruits, Professors E. L. Thorndike and W. D. Scott, chairman and director, respectively, of the committee on classification of personnel, and other psychologists active in the war work, made possible a thorough survey of the work done by the various committees appointed at the time of our advent into the war and, moreover, provided the first opportunity for the Association as a whole to approve, suggest, and cooperate with plans for future work.

The annual business meeting of the Association was held Friday afternoon, December 28. J. W. Baird, of Clark University, was elected president of the Association for the coming year. R. M. Ogden, of Cornell, and W. F. Dearborn, of Harvard, were elected members of the council to serve three years, succeeding W. D. Scott and R. P. Angier. The annual dues will be raised from \$1 to \$2. Thirty-five new members were admitted; three deaths reported. The council will decide later on the place of meeting for the next annual session. The appointment of several committees was authorized to take charge of various branches of the war service, chief among them being a committee to examine the literature of applied psychology, and one to consider the requirements of psychological examiners of recruits and other officers.

The membership of the programme committee for the ensuing year was announced as follows: Messrs. Angier, Baird, and Langfeld. H. L. Hollingworth, as a committee of one appointed by the president on the recommendation of the council, offered the following resolution: "That the American Psychological Association, at its annual meeting, held at Pittsburgh, December 27-29, 1917, hereby expresses its approval of the aims and purposes of Senate Bill 2403, now pending, relating to the provision for establishment and maintenance of model demonstration rural schools; and of House Bill 6490, now pending, relating to the promotion of plans for the elimination of adult illiteracy in the United States; and that the secretary of the Association be requested to forward copies of this resolution to the proper representative in each House of Congress; to the chairman of the Education Committee of the House of Representatives; and to the Senate Committee on Education and Labor." The resolution was adopted.

A feature of the session was the report of H. C. Warren, of Princeton, chairman of the committee on psychological terminology. A preliminary list of definitions and delimitations was presented in printed form and the committee was reappointed to continue its work. It is expected that the work of this committee will do much to standardize the usage of current psychological terminology and more accurately to define the limits of various branches of psychology.

The session was formally opened at 10 A.M., Thursday, December 27, with a programme of four papers on general psychology, Major Robert M. Yerkes, president of the Association, in charge. L. T. Troland, Harvard University, outlined a synaptic theory of affective intensity, the degree of conscious pleasantness-unpleasantness, in terms of the rates of change of conductivity in the cortical synapses. The degree of the affective intensity is at every instant proportional to the *sum of the rates* of conductivity through the group of cortical synapses. H. L. Hollingworth, of Columbia University, in a paper entitled, "The Logic of Intermediate Steps," pointed out the fallacy of assuming intermediaries to indicate identity in essence or structure, or a direct developmental relation between extremes, whose nature or origin is in question. "From the fact that we pass from one thing to another by degrees, it does not follow that the two things are of the same nature." R. M. Ogden, Cornell University, discussed the attributes of sounds, classified as three kinds: tones, vowels, and noises, having the characteristics, respectively, of tonality, vocality, and noisiness. W. B. Pillsbury pointed out certain analogies between behavior processes, especially (1) hitting upon a successful response and (2) accepting it as successful, and the

processes involved in more complex mental operations—recognition, perception, conception. The need of carefully distinguishing the two problems, (1) that of the origin of the suggestions and (2) that of the means of testing, was urged.

The afternoon session of Thursday was devoted to experimental psychology. At this time the exhibit of new apparatus and teaching materials was opened. Among the interesting displays were F. S. Gilbreth's models and pictures of motion studies; G. T. Gray, University of Texas, short-exposure apparatus; L. T. Troland, Harvard University, a new control machine for continuous choice reaction; and F. N. Maxfield's demonstration of the use of design (colored) cubes for tests of memory, imitation, and reconstruction with deaf or foreign subjects. A. P. Weiss, of Ohio State University, displayed a convenient electrical seconds pendulum and interval timer which may be adapted to a wide variety of uses in the laboratory. Knight Dunlap, of Johns Hopkins, demonstrated an electrically driven tuning-fork which could be adjusted to a wide variety of absolutely determinable amplitudes; a set of cards pierced with diamond-shaped holes at various angles for tactual discrimination experiments; and a steadiness tester, in the form of a revolvable disk pierced with variously sized holes near the circumference, which enables each hole to be presented at the same point in space. K. Gordon, of the Carnegie Institute, displayed a series of 50 small colored pictures of Oriental rugs used by her in obtaining scales of esthetic judgment. C. H. Stoelting, representing the Chicago firm of that name, displayed and demonstrated a variety of new and improved apparatus, including pneumographs, a chronoscope, a new acoumeter, a new steadiness tester, and an improved exposure apparatus devised to procure a constant intensity of illumination.

The session of experimental psychology opened with a discussion on "Interference of Will-Impulses" in the case of simple finger movements in response to visual stimuli and writing movements, by A. A. Roback, of the University of Pittsburgh. The study revealed characteristic differences between sensory and motor inhibition and a prevalence of automatism, graphic stammering, and slurring of vowels, a universal tendency to take the line of least resistance—results which "tend to disprove the Freudian theory of speech and writing lapses, or at least to confine its validity to a very limited range." P. Reeves, of the research laboratory of the Eastman Kodak Company, described the measurement of dilation of the pupil adapted to various intensities of light and the rate of dilation and contraction under various conditions. In changing from daylight to complete darkness, complete contraction occurs within 2 seconds as a rule, but from 3 to 10 minutes is required for complete dilation

when the dark adapted eye is exposed to sunlight. E. C. Tolman, of Northwestern University, found that senseless material learned during "efficient" working periods (morning) was no better retained than when learned during "inefficient" periods (afternoon). K. M. Dallenbach reported results obtained with the cooperation of E. E. Cassell, both of Cornell University, to the effect that the attitude of the observer has very great influence upon the effects of distraction (metronome, bells, tuning-fork), often leading to contradictory results. H. S. Langfeld, of Harvard University, put a series of sketches depicting emotional expressions to interesting use as a test of suggestibility. The judgments of most subjects with regard to the emotions depicted were easily controlled by suggestion, although free reactions were quite accurate. F. C. Dockeray, University of Kansas, found that subjects, in addition tests, showed considerably greater loss of efficiency under controlled than under non-controlled speed. The subject, left to himself, adjusts speed to insure reasonable accuracy according to the length of the period. E. G. Boring, of Cornell University, urged the determination of the "mnemonic function"—the measures of memory in an associative limen, showing the percentages of material learned as a function of some condition of association, *e. g.*, number of repetitions or number of syllables in a series. It was suggested that the associative strength is proportional to the logarithm of the number of repetitions and that the "mnemonic function" is the *phi*-function of *gamma*. A. P. Weiss, Ohio State University, described the technique of preliminary experiments upon the "conditional reflex," light being substituted for sound, in the case of human subjects.

The first day of the session came to a close with the annual dinner, attended by approximately one hundred, at the Pittsburgh Athletic Association, followed by an address "Psychology in Relation to the War" by the president of the Association, Major Robert M. Yerkes. The history of the preparation of war work under the committee of nine (three each from the American Psychological Association, the National Academy of Science, and the American Association for the Advancement of Science) was explained in detail, as well as the accomplishments of twelve subcommittees devoting themselves to particular phases of the work. The work of devising the system of group tests and their application to 100,000 enlisted men and 5,000 officers; the use made of these results, and the acknowledgment of their value to military officers by the statements of 78 per cent. of the company commanders in the four camps where they were tried, has led the war department to approve the extension of this work to all camps. The plan to be employed henceforth in more than thirty camps was outlined by Major Yerkes as follows: (1) group examina-

tions of ability to read and write, (2) examinations of the literate group by means of the original set of tests as recently modified, (3) examinations of the illiterate group with a set of tests recently devised, (4) all falling below a certain limit to be individually examined by tests recently arranged. The group tests will be given immediately upon the arrival of recruits at the camp, while the individual examination of the inferior grades will be conducted at convenient times. Recommendations concerning the fitness of the recruits for various offices and vocations will be made on the basis of examinations. The plans of the committee on classification of personnel, the rehabilitation committee, committee on psychological literature pertaining to the war, committee on recreation, and others were presented.

The session on Friday morning, held jointly with Section H of the American Association for the Advancement of Science, included papers on the war work of psychologists and papers on mental tests. W. D. Scott, director of the committee on classification of personnel, reported the work of that committee in introducing in the army certain methods of classifying, selecting, and assigning men according to their fitness. E. L. Thorndike, chairman of the same committee, presented certain fundamental theorems in the selection of men; the principles of statistical weighing of symptoms, the misuse of distribution curves or levels, and the need of analysis of the inter-correlation of symptoms, were explained. Illustrations of the misuse of symptoms were given such as over-weighting, by giving equal value to several symptoms each depending on a common element, *e. g.*, intellectual capacity; over-weighting where the value of one trait depends on another, *e. g.*, value of memory depending on honesty; cases in which a certain amount of a trait (not the greatest or least) is optimum, *e. g.*, a barber needs a certain amount of intellect or training, too much or too little being disadvantageous, and the like.

K. Gordon, Carnegie Institute of Technology, obtained correlations of $+0.86$, $+0.82$ and $+0.87$ between the average arrangements of sets of 25 colored pictures of Oriental rugs by groups of individuals, 30 or more to the group. The correlation between the judgments of each individual and the group judgments was about $+0.42$. B. Ruml, of Carnegie Institute, explained a "rank-tangential coefficient" formulated to derive an index of efficiency of the selection of any portion of a group of subjects from a larger group of similar ability. L. L. Thurstone, Carnegie Institute, described several tests designed to determine ability to think in three-dimensional space, which he believes to be a special ability on the basis of a bimodal distribution of scores. A paper by P. R. Dawson and

J. P. Porter, Clark University, gave a favorable account of the Yerkes Multiple Choice Apparatus as a means of tapping the general ability of eighth-grade and university students. W. Healy, of the Boston Juvenile Court, showed an improved form of a pictorial completion test. G. M. Whipple, University of Illinois, described a very significant application of some 64 tests in selecting pupils for a gifted class. Many of the tests proved to be a high value in differentiating abilities within a gifted group, and the gifted can be differentiated from the less gifted with great accuracy. The reader recommended the segregation of gifted children into special classes upon the basis of the outcome of the trials reported. C. Rahn, University of Illinois, in a study of functional periodicity in men, presented data indicating certain slight changes (1) in the curve of energy-output, (2) in effective coloring, (3) in alimentary function, (4) in intellectual efficiency, and (5) in associational processes nearly if not quite on a par with those observed in women by an earlier study of L. S. Hollingworth, of Columbia. It appeared that organic conditions, rather than the "mythical psychical complexes" of the Freudians, are potent causes of the erotic coloring of the frequent dreams occurring before and after the period. W. T. Shepherd, Washington, D. C., attributed to imagination, credulity, fear, reverence and love for dead friends, natural phenomena, and to dreams, each a rôle in the development of typical concepts of "spirits" among different ancient and modern peoples.

Several papers on the use of intelligence tests were presented. K. T. Waugh, Beloit College, gave results of measurements of the mentality of Oriental and American college students. H. H. Caldwell, University of Wisconsin, found Terman's tests for average and superior adults to give fair correlations with teachers' estimates and college grades of 50 sophomore and junior women students. J. E. W. Wallin, St. Louis, found certain serial mental tests to give, probably, a truer measure of the intellectual level of epileptic and normal children than the Binet-Simon. S. L. Pressley, University of Indiana, presented very important findings with regard to irregularity of responses, on Point and Stanford scales, for normal, feeble-minded, and insane cases. It was urged that an exact statement of irregularity is second in importance only to the total score. The distribution of correct responses differs markedly for different types of mental defect.

On Friday afternoon, a session for abnormal and comparative psychology was held at the Hall of Psychology, University of Pittsburgh. A paper by G. V. N. Dearborn, Sargent Normal School, on "Vasomotion as a Test of Will power" was read. W. S. Hunter, University of Kansas, presented the results of maze learning by

white rats indicating that in certain complicated mazes mere succession of kinesthetic processes are insufficient to establish complete learning. H. A. Ruger, Teachers College, in experiments with white rats, found no transfer from semi-circular canal practise in learning a maze—the rats being carried in a closed car several times around the correct path of the Hampton Court maze. Other conditions, *e. g.*, learning the last half of maze first, rotation of maze to 90 per cent., *etc.*, showed some transfer effects. J. B. Miner, Carnegie Institute, reinterpreted the data from Binet tests of some 7,000 delinquents, finding the least deficiency among juvenile-court delinquents and the greatest deficiency among reformatory groups of women and repeaters in local jails and workhouses. E. E. Southard, Harvard University, in a series of valuable suggestions, indicated the needs felt by psychologists for psychological work. The speaker stressed the importance of determining the presence and absence of instincts and original tendencies as an aid to solving problems of psychiatry.

On the evening of Friday, the Association attended the opening meeting of the American Association for the Advancement of Science, in the Carnegie Hall of Music. President C. R. Van Hise, University of Wisconsin, retiring president of the American Association for the Advancement of Science, gave an address on "Some Economic Aspects of the World War." This address has been published in *Science*.

The final session of the psychologists was held Saturday in conjunction with Section L of the American Association for the Advancement of Science. E. E. Jones, Northwestern University, described a standardized opposite scale; S. A. Courtis, of Detroit, discussed the objective measurement of relative size of units in judgment scales; A. L. Bronner, Juvenile Court, Boston, pointed out the inconsistent use of the term "apperception"; suggested methods of study of apperceptive abilities, and their relation to conduct. E. Murray, Wilson College, presented data obtained from tests upon spelling ability and vocabularies of 200 college students. L. S. Hollingworth, Teachers College, reported upon an extensive research of disabilities in spelling. It was found that knowledge of meaning is an important determinant of spelling ability. There is a constant tendency for misspelled words to be too short; more often than not misspelled words contain (in wrong order) the appropriate letters; the initial letters are nearly always right and the first half of the word has a great advantage over the last. D. Starch, University of Wisconsin, reported on the rôle of visual span, rapidity of eye movements, rapidity of association and control of speech function as factors in reading ability. L. A. Peckstein, University of

Rochester, found certain modified forms of the "part" method to be superior to the "whole" in learning paired series of nonsense syllables. F. A. C. Perrin, University of Texas, presented learning curves obtained from mirror reading, alphabet and analogies tests, showing the bearing of practise on individual differences.

The session of the Psychological Association closed on Saturday, although many remained to attend the meeting of the various scientific societies convening the following week. The Carnegie Institute of Technology, the University of Pittsburgh, and civilians of the city proved to be excellent hosts and many courtesies were extended by private individuals. Not among the least favors were the opportunities to visit the psychological clinic, various community buildings, and especially the industrial and manufacturing establishments with which Pittsburgh is surrounded.

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REVIEWS AND ABSTRACTS OF LITERATURE

Nietzsche, the Thinker: A Study. WILLIAM MACKINTOSH SALTER.
New York: Henry Holt and Company. 1917. Pp. x + 539.

In *Nietzsche, the Thinker* Mr. Salter has done the English reading public a large service, for he has given them what is easily the best book in English and what will rank well among the best in other languages on a man, a notable—when not notorious—figure in recent times, who before the war was much misunderstood and misrepresented and since the war has been flagrantly criticized and abused. That this German, who said: "To be a good German means to un-German oneself," who had and expressed a genuine and eager interest in a new, international Europe, as against a narrow Teutonism or nationalism generally, who saw in German imperialism, "*Deutschland, Deutschland über Alles*," as conceived by Bismarck and further purposed and openly attempted by his successors, the era of Germany's stultification (*Verdummung*), who exclaimed of Bismarck or at least of one of his kind: "Strong. Strong. Strong and mad," and who in his virtual deification of power sought above all things to avoid identifying power with mere might, that this German should be so often charged with responsibility for the present war and its Teutonic brutalities, as if, after Mr. Salter to quote an Englishman, the war were only "Nietzsche in action," is certainly a strange miscarriage of justice. "*Deutschland, Deutschland über Alles*" and Nietzsche's *Uebermensch* have very little in common.

Indeed, in their contemplated superiorities they are as far apart as two things in human life can well be; say, for example if not also for direct exposition, as man's two ways of exploiting nature and her various forces and impulses, one at the beginning of his evolution, the way of instinct and savagery, and the other at the end, the way of power—physical in its medium, but not in its will—by understanding and appreciation. No leader, then, of present, visible Germany was this man Nietzsche. He did call upon his people, seeking to stir them deeply to a will to power, but so far their response, if in any measure present conditions have been a response, has been curiously stupid and bungling, being quite without real appreciation and being in effect seriously reversionary and in no sense progressive or exalted. "The Germans would have it, said Nietzsche [writing without evidence of the war], that 'force must reveal itself in hardness and cruelty.' " So the Germans then and since; but Nietzsche himself in what he would say was *über-Deutsch*. I can think of no more appropriate characterization of him. He may have been obscure. He may have been morbid. He may have had no real system in his living or in his thinking. He may have been abnormally uplifted at times even to the point of serious and offensive megalomania and have collapsed finally in mind (1889) as well as in body (1900). All these are matters of greater or less uncertainty; all of them grounds of possible criticism to others, of possible failure to him; but in what he stood for, successfully or unsuccessfully, he was a super-German, profoundly progressive and idealistic in his philosophy, not offensively reversionary, and in a book that throughout is scholarly and conscientious, that is sympathetic without being blind or uncontrolled, Mr. Salter has established this beyond peradventure. Of course there are those who have not needed to be shown the real Nietzsche, but they are in a small minority; so that this book has very ample reason for being. In these days, too, of the war and its blind partisanship it is well to be so definitely reminded that *at least* one German, a Prussian at that, and popularly supposed an arch-offender, was in reality superior to his German kind. There *may* be other Germans also *über-Deutsch*!

Probably Nietzsche actually inspired his readers to misunderstand him. He so shocked and challenged convention; gloried in paradox; courted profanity and violence of speech generally; flaunted—or faced?—pessimism; exalted power. With what seemed only offensive conceit he presumed to place himself beyond the very distinctions that men generally in their thinking or in their living have depended upon. What more natural, then, than that he should seem to have sounded the call of the wild! Only the outbreak of

the war was needed to prove the seeming to be quite real! But, as Mr. Salter well says, the war, if having place in Nietzsche's philosophy, can be really only a fulfilment of a possible prophecy in his *Ecce Homo* and *Twilight of the Idols*, where references are made to "Europe's system of small states and small politics"—in contrast, as Salter points out, with "a united Europe and a great politics"—to "this *nevrose nationale* with which Europe is sick," "this sickness and unreason, which is the strongest force against culture that exists, nationalism, . . . and which with the founding of the German empire passed into a critical state." Men at large are so lacking in discrimination. There are always those two ways of departing from the law and the prophets, of escaping established distinctions and so securing special advantage and power, the way of sheer violence and the way of real fulfilment, of primitive instinct and of commanding and advancing will, and men generally, including many who might have known better and ought to have known better, inferred the former as Nietzsche's meaning when really he meant the latter. Not infrequently a seer's lawlessness has appeared only offense and transgression.

Mr. Salter's book is well written and well constructed, but it is, on the whole, rather a scholarly production than a literary or artistic one. It suggests an important building which still bears the scaffolding needed in the construction. Thus, after an introduction in three chapters, the three periods of Nietzsche's life are taken up in order, comprising five, four, and seventeen chapters, respectively, and treated each one as to its general character, its ultimate view of the world, and its attitude to morals and politics. For the third period eight chapters are given to Nietzsche's criticism of morality, four to "Moral Construction," and these are followed by "Social Criticism" (one chapter) and "Social Construction" (three chapters). To undertake a summary of all this in any detail would of course be inappropriate here. Suffice it to say once more that the work is extremely well done and that in notable measure by careful and frequent references and quotations, Nietzsche is made to speak for himself. Fifty pages of notes at the end enhance the critical and scholarly character of the work. Significant, although also in part rather puzzling, is the following short Epilogue (page 474): "A distinguished German theologian, Dr. Heinrich Weinel, speaks of Nietzsche's philosophy as 'the history of his life'—piously meaning presumably that both men and philosophy were bad—"adding: 'The important thing in the last instance is not that we refute him, but that we understand him. For to understand him is to overcome him.' If any be helped to a better understanding of Nietzsche by reading these pages"—Query: Better than the Rev-

erend Weinel's?—"I shall be glad. Whether they are proportionally nearer to overcoming him, I leave it to them to say."

Nietzsche's philosophy truly is the story of his life, a life that had its struggles and its failures, but also its aspirations and important achievement. Not always lovely, it nevertheless sought and found something richly worth while and in itself it was a life well worth such a study as Mr. Salter has given it. Was he truly a giant?¹ Was he a great man of his time? Then there is possible significance, perhaps also real prophecy, in the fact that the three periods of his development, first his devotion to esthetic values, then his passion for actuality, and finally his seer's faith and exaltation, periods, in other words, of art, of science, and of philosophy, reveal in his personal life only a recapitulation, vivid and tensely dramatic, of Christendom's experience since the days of the Renaissance, when first the medieval morality began to be openly exposed to scrutiny and criticism. Such distinct "recapitulation" is certainly what may give size to a man and Christendom, as many would say, is soon to leave or is already leaving its seventeenth to nineteenth century passion for actuality, its objectively rationalistic and scientific interest and endeavor, its realism practical or theoretical, and is very soon to enter or already is entering a time, to quote Mr. Salter's account of Nietzsche's third period, of "*science and the ideal*." Thus Mr. Salter writes (p. 155): "If science, knowledge of the actual whatever becomes of ideals, may be taken as the characteristic note of the second period, science *and* the ideal are the note of the third. Close observation of reality and an unblanched face before it continue, but there is a fresh sense that the actual is only a part of the totality of things. Science is simply a negative test—we must not have ideals which are inconsistent with it." As I read this, I was interested in it as an account of Nietzsche's life, but also I found myself thinking of Christendom's present stress and the great transition which this stress must forecast. "*Science and the ideal*" truly is what Christendom with a fresh sense is now beginning to feel and, as for the third period being philosophical, a better definition of the new philosophy soon to come if not already forming, would be hard to find. Christendom, we should recognize, has not yet really had its own deep philosophy, say its Socratic period and its consequent awakening to an inner, possibly even super-Christian, voice. Its own art it has had, thanks to Michelangelo, Raphael, da Vinci, and others, and its centuries of science, but not yet its real and free, at once convincing and convicting, philosophy. Philosophies, yes; many of them; but only as hand-

¹ *The Harvard Graduates Magazine*, as cited by Mr. Salter, sees him slain by Paul Elmer More's *Nietzsche*, "compact as David's pebble."

maids, first of theology, then of various sciences, mathematics and mechanics, biology, epistemology. Its essentially philosophical era, era of its finally unrestrained philosophy, at best is but just at hand, as indeed the various reactionary realisms, "naïve" or critically scientific, of the hour only emphasize. Do these not force the issue?

And in the time of its new vision may Christendom experience some of the joy and faith that came to Nietzsche, for whom all change, all becoming, was a "dance of gods," a "wantonness of gods." "To blaspheme against the earth," he wrote, "is now a most dreadful thing," and again: "Certain great perspectives of the spiritual and moral horizon are my strongest springs of life." Furthermore, his idea of "eternal recurrence," so different from the conventional notion of immortality and so deeply significant to Nietzsche, is doubtless fantastic and also approaches mysticism; but, however unscientific formally, it does suggest "science and the ideal." Some day, too, Christendom may, not adopt it intact, but have vision of something like it, of something also both more scientific and more ideal than orthodox "immortality." Nietzsche, then, may not be a great prophet of Christendom's next step, but—apart from all questions of his size, since it is probably too early to make accurate measurements—he easily may be a real one.

There are two things, finally, in Mr. Salter's book, or in Nietzsche's life, of which I venture to speak more specifically, namely, the interesting and illuminating story of Nietzsche's relation to Richard Wagner and the significance of Nietzsche's "will to power." The final break with Wagner after years of admiration and affection shook Nietzsche profoundly, even making him "spiritually ill." He had hoped large things of Wagner and his great art, but *Parsifal* brought complete disillusionment. To preach celibacy was but to incite mankind to the unnatural. To Nietzsche *Parsifal* could mean only Romanism and Romanism's separation of the natural and the spiritual which must always make the natural brutal, sensual, offensive. Before the war there were in Germany societies organizing against Wagner's influence, anti-Wagner clubs, Wagner being held in serious measure responsible for certain brutish tendencies in German life, and, while the anti-Wagner clubs probably were for the most part only of a kind with conventional reform movements generally, springing from commendable moral feeling, but having little if any real vision, it seems right to associate the seer Nietzsche with them. To say the least both he and they were anti-Wagner, and with the object of making life morally better. Nietzsche, however, saw how unnaturalism, an abstract unworldliness, always begets brutishness. Morality, he realized, could not be substantial, or dependable, and at the same time unnatural. Just the unnaturalness

of the preached morality of the time induced the brutish sensuality. Nietzsche, then, seems to have had hopes of an ideal life incarnate in the actual and he found Wagner only perpetuating their separation. For the rest, Mr. Salter suggests that the Wagner episode in Nietzsche's life, ending as it did, was a critical influence in carrying him out of his first period into his second, out of his passion for art into his demand for actuality. The actual, however, ideally valued or, as I venture to put it, *envisioned*—the third period—would have all the value of a wonderful incarnation and revelation and in its effect on Christendom would force the Augustinian theology and Christology once for all to give place to a sublimated or sanctified cosmology, for which all nature, not a single man, would be the ideal incarnate. After an era of science what else could be expected? "To blaspheme against the earth" must indeed henceforth be "the most dreadful thing."

But such an envisioning of the earth, or of the natural, would bring its own humanism, its own ideal for man, and in Nietzsche's "will to power" we certainly have an indication of this. The phrase, however, bears a message rather than a doctrine. Mr. Salter tries to formulate the logic of the notion and of its development in Nietzsche's mind, but confesses that the logic he proposes must be his, not necessarily Nietzsche's. Nietzsche's interest lay beyond logic. As to the meaning of his "will to power" it means, to begin with, individualism in the sense of a pluralistic voluntarism and at the same time of what Höfding, quoted by Salter, has described as "radical aristocratism"—sharply in contrast with radical democracy. The Augustinian theology, I suggest, had made for the group morality so decried by Nietzsche; among other things by its attitude towards a single, deified man it had made for morality as a collective conformity to a type and so for men generally in all their relations had fostered institutional life and loyalty—at expense of the individual—and an aristocracy of class—instead of an aristocracy of person. But Nietzsche's view, thanks to his art and his science, is wider and deeper as wider. His ideal incarnate being the life of nature, individual character and achievement are exalted above the social and institutional. Individuals, more vital, less formal than institutions, are close to nature. As Nietzsche himself might say, individuals move immediately in life and nature, Christians only belong to some formal order or institution. Christians have character thrust upon them, persons are themselves what they are and they possess possibilities or powers beyond those of group or institution and above the common distinctions which the group and the institution impose. The best individual, moreover, must rule, lead. To quote Mr. Salter again: It is peculiar to Nietzsche that he

"conceives an end for man beyond society." Great individuals do indeed spring from society, but they "rise above it—the social individual [the individual who 'belongs'] is not the highest type. The lonely, the solitary, those whose occupations and interests are beyond the sympathy and perhaps even the comprehension of most of us . . . are the real end of humanity, they alone are properly ends in themselves." Others must serve, follow them. With all of which it remains only to emphasize, not the mere personalism or individualism, but the individualistic aristocratism and then to add that the driving force of human life, as of all life, from the lowest to the highest, is will to power, the "will, not to be, but to be more," to realize one's essentially personal and super-social or super-institutional possibilities, to be a great man, solitary and masterful as solitary. Plainly, a cosmological notion, when one takes into account all the incidents of its rise, as well as a psychological one; or a notion in which cosmology and psychology meet, for Nietzsche would exalt the individual, or some individual, to a cosmic will. Yet, once more, lest his "will to power" be still understood to enjoin physical might and tyranny, "hardness and cruelty," it must be observed, first, that he seeks to substitute the "will to power" for the traditional will to self-preservation and, second, that without any possible question he spiritualizes this to mean for mankind "life and the highest possible ascent of life" in a sense quite subordinating the physical to the spiritual, exactly as self-preservation has been spiritualized or exalted to mean "salvation."

Nietzsche's philosophy has already been called by many hard names, hard in form when not in meaning. One more, fully justified by Mr. Salter's book, may be proposed: Appreciative Naturalism; or, if I may even "make it two," Envisioned Realism. Furthermore, Nietzsche may unduly exalt the real and vital above the formal, the person above the institution, and the individual above the group; too much he may stress genius and its right to power; he may, in short, be too abstractly anarchistic; but at least one can say that justification for his seeming exaggeration may lie in current needs, that is, in the stage to which history has brought civilization. Perhaps, as not before even in all history, there is call for a great, powerful, epoch-making individual; for a masterful, spiritual leader of the vital forces of men. When history shows reversion, there is challenge of progress. When the law is broken brutally, the law must be broken spiritually. If I were to criticize Mr. Salter's book, my criticism would be what this suggests. Thus Mr. Salter has not studied Nietzsche historically. In a way that may be said even to make further study and exposition unnecessary, at least for a long time, he has presented and explained the philosophy itself, but its

importance as possibly contributing significantly to the philosophy of an era, and so its place in the history of philosophy, he has not duly considered. But, some one may object, Nietzsche in fact or in his own conceit was super-historical? To indulge in a pretty paradox, there are times when history must have its super-historical moments.

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JOURNALS AND NEW BOOKS

REVUE DE MÉTAPHYSIQUE ET DE MORALE, May, 1917.

L'idée initiale de la philosophie de Descartes: A. ESPINAS.—A biographical demonstration of the fundamentally religious motive giving rise to Descartes's system. *De la méthode en histoire de la philosophie*: V. DELBOS.—Insistence upon the importance of following the development and variations of the thoughts of particular philosophers instead of trying to compress their work into immobile systems. *La logique algorithmique et le calcul des probabilités*: L. COUTURAT.—An extract from an early unpublished work of Couturat's on Algorithmic Logic, at least prior to 1902. *Des conséquences d'un changement d'idées primitives dans une théorie déductive quelconque*: A. PADOA.—"When we wish to make a change of primitive ideas, we can transform a given deductive theory according to a well-determined plan of work. . . . Among the possibilities . . . is that of diminishing the number of primitive ideas as well as of postulates." *Questions pratiques. Pourquoi vaut la foi juréi*: G. DAVY. *Réflexions sur la discipline militaire*: R. H.

REVUE DE MÉTAPHYSIQUE ET DE MORALE, July, 1917.

De la méthode en histoire de la philosophie: V. DELBOS.—A study of the analysis and reconstitution of doctrines. *Stendhal et l'idéologie*: H. DELACROIX.—Although Stendhal was far from being a professional philosopher, he nevertheless contributed to French psychology of the nineteenth century, and it is possible to place him among the Ideologists. *Dynamique généralisée et dégradation de l'énergie*: L. SELME.—"The country of brutal imprisonments in scorn of social relations, ought to be that of the initiation of the 'death of the universe.' When we neglect the realities of individual relations, the unforeseen has inevitable returns. We do not falsify with impunity the profound and living hierarchy of realities by putting in their place factitious demarcations." *Enseignement. Enquête sur l'orientation de l'enseignement secondaire*: G. BELOT. *Questions pratiques. La coutume contra la loi*: J. CHARMONT. *Divers aspects de la notion d'humanité*: E. BRÉHIER.

JOURNAL OF ABNORMAL PSYCHOLOGY. August, 1917. Symposium—The Theories of Freud, Jung and Adler: I. *The Work of Sigmund Freud* (pp. 145–160): JAMES J. PUTNAM.—A review of Freud's work is given by one in sympathy with it. II. *Notes with Reference to Freud, Jung, and Adler* (pp. 161–167): TRIGANT BURROW.—The positions of Jung and Adler are not essentially irreconcilable with Freud. III. *The Adlerian Concept of the Neuroses* (pp. 168–173): WILLIAM A. WHITE.—Adler makes the organic basis the basis of his whole consideration of the neurosis. *Some Criticism of the Freudian Psychology* (pp. 174–194): R. S. WOODWORTH.—A psychologist adversely criticizes the Freudian psychology. *Need for a Stricter Definition of Terms in Psychopathology* (pp. 195–199): MEYER SOLOMON.—A few of the terms which used a clearer and better definition are mentioned. *Correspondence. Notes and Current Events. Reviews. Books Received.*

Breese, Burtis Burt. *Psychology*. New York, Chicago, Boston: Charles Scribner's Sons. 1917. Pp. x + 482.

Everett, Walter Goodnow. *Moral Values: A Study of the Principles of Conduct*. New York: Henry Holt and Company. 1918. Pp. xiii + 439.

Gemelli, Agostino. *Il Nostro Soldato*. Milano: Societa Editoriale Vita e Pensiero. Pp. xii + 339.

Gibson, James. *Locke's Theory of Knowledge and its Historical Relations*. Cambridge, England: University Press. 1917. Pp. xiv + 338. 10s. 6d.

NOTES AND NEWS

THE seventeenth annual meeting of The Western Philosophical Association will be held in Evanston, Illinois, on March 29 and 30, 1918, in acceptance, through action of the Executive Committee, of invitation from the department of philosophy of Northwestern University. Two of the sessions, according to present plans, will be devoted to papers and discussion relating to problems which historical circumstances are thrusting into the forefront of attention. Transformations in ideals and in institutions are already manifest and further changes are inevitable. It is certain that the clearest thinking of which men are capable will be none too clear for the leadership that is demanded. In an hour when passions are intense, philosophy, before all, is needed for the guidance of public counsels; and the philosopher has never had at once a more urgent call and a nobler opportunity. The topics more especially suggested by the Executive Com-

mittee might be stated as follows: In the reconstruction of national and international society which is desirable after the war, what should be the authority of the State in its relation to (a) the liberty of the individual, (b) non-political organizations of human interests, and (c) other political groups? While it is hoped that the problems indicated will commend themselves to the writers of papers, it is not the desire that there be restrictions either upon the topics to be discussed or upon their formulation. Place on the programme will be reserved for papers on any subjects which members may select. It is urged that, so far as possible, papers be published in advance of the time of the meeting. Reprints should then be distributed as widely as possible among the membership. This may be done either directly by the writers themselves or through the Secretary. At the meeting such papers will be regarded as read, the writers, however, being allowed time for elaboration, modification, or comparison with other views. The aim is to increase the definiteness and the constructive value of the discussion. Those who expect to offer papers are requested so to inform the Secretary, Edward L. Schaub, as early as it may be convenient. Either reprints or fairly complete abstracts of all papers which are to be included in the programme should be in the hands of the Secretary not later than March 15.

THE psychological clinic, opened in 1915 by the Southern California Association of Applied Psychology in Los Angeles, has been continued in connection with the department of psychology of the University of Southern California. The clinical work is in charge of Miss Margaret Hamilton, a practising psychologist and president of the association. The preliminary report of the work of the clinic (*Journal of Abnormal Psychology*, October, 1917) lays particular emphasis on methods of psychoanalysis and reeducation. Case reports are to be published as rapidly as possible.

MR. SCHACHNE ISAACS, instructor in psychology, University of Cincinnati, has been commissioned First Lieutenant, Sanitary Corps, National Army. Lieutenant Isaacs is associated with Captain Knight Dunlap in psychological research on problems of high altitude aviation. He has been assigned to the Mineola, Long Island aviation camp where a laboratory is in process of construction.

PROFESSOR EMILE BOUTROUX has written the Preface of the French translation of Santayana's *Egotism in German Philosophy*.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

ON THE DISTINCTION BETWEEN PRIMARY AND SECONDARY QUALITIES

SINCE Protagoras discovered that when half of a taut string vibrates it gives a note an octave higher than that of the whole string, physical science has had as one of its great ends the "reduction of secondary to primary qualities." This end has been quite as strongly evidenced by the unsuccessful as by the successful attempts to further it—by the programmes of the Cartesian or Hobbesian physics as by the highly developed mechanical theory of heat. Or consider the programme of the ancient atomists, the more striking because of its utter hopelessness. The atomists were uncompromising dogmatists as to what science had to do, and thoroughgoing skeptics as to its ability to do it. All the qualities of things must be reduced to the size, shape, arrangement, and mode of motion of the atoms, and all causality must be reduced to the communication of motion by impact. But as to how this reduction was in any case to be effected, only plausible suggestions were possible. Hence a system magnificent in its general outlines and paltry in its details. But the ideal end stands out the more clearly.

Among the opponents of this movement, Aristotle is typical and, from the magnitude of his influence, easily chief. The general *motifs* of the opposition are simple. When a quality is reduced to quantitative terms—when, for example, an harmonic interval is reduced to an arithmetical ratio—what becomes of the quality? It remains. The so-called reduction affects it not at all. An harmonic interval is not a ratio, and a ratio is not an harmonic interval. Similarly, sweetness and sourness are not roundness and sharpness, but distinctive qualities; and so likewise of the colors, *etc.* Let it be conceded that no qualitative change takes place without motion. That does not resolve it into motion. When a blue garment fades, an enormous number and variety of motions no doubt occur; but neither this fact nor any other can replace the fact that the garment was blue and now is gray.

Simple and obvious as these considerations are, their influence

upon physical inquiry has been most unfortunate. The Aristotelian theory of the kinds of matter is again typical. There are four kinds of matter in the sub-lunar world, characterized by the qualities, warm and cold, wet and dry. Fire is primarily warm, and also dry; air wet and also warm; water cold and also wet; earth dry and also cold. Such were the terms in which physical phenomena were to be explained, and beyond which explanation could not go. The result was seen in the rapid development of a smug dogmatism, which made effectual investigation impossible.

The failure of the atomists to reach any trustworthy results, and the confessed tentativeness of the mathematical theory of the elements expounded in Plato's *Timaeus*, may be urged as an excuse for the Aristotelian scheme. If excuses are needed, such a one is doubtless as good as another. But while both types of theory were equally futile at the time, the future belonged to the mathematicians. This was true in later pre-Christian centuries. It was made more evident in the rise of the modern physical sciences.

What fallacy is there in the Aristotelian view? Only a missing of the real point at issue, and a misconception of the strength of the opposition. It is not that the reduced qualities are declared to be unreal—though there are philosophers who have said this—or that in being reduced they are analyzed into quantitative terms—though this also has been asserted. The vital contention is that the qualities in question are, directly or indirectly, relative to the physiology of animal, or specifically human, perception, and hence must not be admitted into an explanatory account of the mutual behavior of bodies in general, for which perception by men or other animals is an irrelevant contingency.

In physical science colors are indispensable descriptive elements. Thus it is a convenient circumstance that one form of phosphorus is yellow and another red, the former being poisonous while the latter is not. In the use of phosphorus the color is an ever-present and thoroughly trustworthy guide. But no one suggests that the color is in any degree responsible for the effect on the alimentary canal. Similarly, vinegar and dilute sulphuric acid both taste sour, and both redden blue litmus paper; but no one attributes this effect to the sour taste.

The distinction between primary and secondary qualities is thus a real and exceedingly important one. And yet for the last two hundred years English philosophy has, for the most part, given it scant recognition or has even denied it altogether. This state of affairs is, I believe, in the main traceable to the critical reaction carried through by Berkeley against the "common-sense" theory of the distinction set forth by Locke.

Locke, it will be remembered, held, in the first place, that the ideas of things are (psychologically) composed of the ideas of their qualities *plus* a certain vague idea of a substratum or possessor of the qualities; and that the ideas of qualities, if complex, are resolvable into simple ideas, derived—in the case of external objects—from sensation. The simple ideas of sensation are derived, for the most part, from one or another single sense: colors from sight alone, tones from hearing alone, solidity (or impenetrability) from touch alone, *etc.* But there are exceptions. The ideas of size, shape, motion, and rest are derived both from touch and from sight. These exceptional ideas, together with the idea of solidity, are further remarkable in that they resemble the qualities themselves as they exist in the external objects, while in the case of the rest no such resemblance exists. This, then, is the distinction between primary and secondary qualities.

In appreciating the significance of Berkeley's famous criticism, it is as important to observe the extent to which Locke's theories are retained as to note the various points of divergence.

1. Berkeley accepts the theory that the ideas of things are compounded of the ideas of their perceived qualities, rejecting only the idea of the material substance which Locke conceived to be necessary to underlie and hold together the qualities. This general agreement is the more remarkable, because the distinction between logical and psychological analysis is due, more than to any one else, to Berkeley himself.

2. He condemns the distinction between ideas derived from one and those derived from two senses. No idea is common to two sense-departments. Visual size, shape, motion, and rest have nothing in common with the tactual ideas denoted by the same names. The two sets of ideas are so closely and so uniformly conjoined in our experience, that they have become almost indissolubly associated together: we "see" how a thing feels, and "feel" how it looks. But the elementary ideas are absolutely disparate.

3. He holds that there is no more reason for supposing that the ideas of the so-called primary qualities resemble the objective qualities themselves, than for supposing this of the ideas of the so-called secondary qualities. *If* beyond and distinct from our ideas there are things which are not ideas, but active, substantial entities, it is impossible that our ideas should in any way resemble them.

If there were ideas common to two senses, it might have been maintained that these, at least (leaving aside the idea of solidity), are peculiar. For ideas belonging to a single sense might be thought relative to the peculiar psychological conditions of that sense; whereas ideas common to two senses, so different in other respects

as sight and touch, must be free from any such degree of relativity, and thus may well represent the things as they are. However, there are no such ideas.

4. But Berkeley further declares that the distinction between things and ideas of things is itself nugatory—except, indeed, as it may be interpreted as a distinction between two classes of ideas: namely, ideas of sensation (or sensations) and ideas of imagination (or images). The former class are distinguished by comparatively great intensity and steadiness, as well as by certain uniformities observable in their succession (the “laws of nature”), and by their inaccessibility to the direct control of volition. The latter are comparatively weak ideas, more fitting, more irregular, and subject in some degree to voluntary control.

5. Consistently with the foregoing principles, the qualities of things are to be regarded as nothing but relatively simple sensations into which the things are found to be analyzable; and the like is true of the “ideas” (more properly, the images) of the qualities. Neither primary nor secondary qualities belong to “things in themselves,” if this is intended to mean things otherwise than as we perceive them. But as a matter of fact things exist as we perceive them, and only as we perceive them. To be perceived is, for them, existence. Hence if the formal distinction between primary and secondary qualities is to be retained, all qualities must be set down as primary: there are no secondary qualities.¹

As a refutation of Locke, Berkeley’s theory is all that is to be desired; and as such it was as nearly as possible successful. Locke remained the master of those who had common sense; but in the domain of philosophy he became a point of departure rather than a guide.

Berkeley’s weakness lay in those presuppositions of his philosophy which he inherited from Locke, and which with his keener and bolder thought he developed to consequences that baffle credence. Among these presuppositions is the *assumed identity of the qualities of sensation and the secondary qualities of things*—an important case of a larger confusion between sensation and perception, which, in its generality, it will not be necessary for us to include in this discussion.

¹ It may be interesting to recall that Berkeley proposed to base upon these principles a reform of geometry and mechanics, by which those sciences would be greatly simplified. The point of departure of the reform was to be the rejection of the mathematical point and the substitution for it of the *minimum sensible* of touch. Since the point can not be perceived or imagined, we really have no idea of it—only a word which adds nothing to our understanding of anything. Accordingly, the infinite divisibility of the straight line disappears; motion becomes discrete; and the infinitesimal calculus is exploded.

Let us consider a few simple illustrations.

(i) I buy a bottle of vanilla extract, and then protest to the grocer that the extract is worthless, being entirely without odor. He notices that the cork has not been pulled, and asks how I expect to smell the odor with the bottle corked. I say that that circumstance is irrelevant: that an odor to exist must be perceived, and, therefore, the alleged odor, being unperceived, does not exist.

The cork is pulled; and I now find the odor very weak. The grocer objects that I have a cold and hence am not a competent judge. I reply that the odor is as I perceive it, and I perceive it as weak; therefore, it is weak. And I insist upon the return of my money.

(ii) I refuse to purchase a violin (warranted to have an exquisite tone) on the ground that it has no tone at all. Nobody is touching it.

(iii) I order paper of a certain standard red shade. When it comes I declare that it is off-color. The daylight, as it happens, is golden with the autumn leaves; but that does not prevent me from rejecting the paper as defective.

In all this I am acting contrary to common sense. But am I not acting in strict accord with the identification of the olfactory, auditory, and visual sensation-qualities with the secondary qualities of odor, tone, and color?

Let us recall how Berkeley deals with such cases—for, indeed, he was not so stupid as to overlook them or to fail to make some provision for them in his theory. We may imagine him replying somewhat as follows:

The ideas of sensation are connected by those uniformities which we call the "laws of nature." The sensations which one at any time experiences are thus, in so far as he is acquainted with the laws of nature, evidence to him of the fact (or the possibility) that he is about to perceive certain other sensations; and they are, moreover, evidence that under like conditions similar sensations will be felt by his fellow men. Accordingly, we are able, in our use of language, to use a single term, not for a single sensation, but for a whole group or series of sensations. We speak of "*the vanilla*" as if that were an identical object whether the bottle is corked or uncorked. We speak of "*the odor*" of the vanilla as if that were one object; whereas what actually is perceived is a variety of sensations, very similar in quality, to be sure, but differing greatly in intensity. Nay more, even when no such sensation is actually perceived—at any rate in any human experience—we continue to make present assertions about "*the odor*," as if that were something that endured whether perceived or not. Such assertions, however, are elliptical. What one expresses is merely the conclusion of a conditional proposition,

which is true as a whole, though the condition is contrary to fact. "This extract has the characteristic vanilla odor," asserted when the bottle is tightly corked, is a condensed form of the proposition, that *if* certain conditions, now absent, *were* present, I, or another like me, *would* experience a certain sensation. Similarly the proposition, "The earth revolves about the sun," means that *if* we were placed in such or such a position, and certain other requisite circumstances were given, we should see the earth moving in that way; and this may be fairly deduced from actual observations, by well-established laws of nature.²

Now when a man buys vanilla of a certain guaranteed strength, he is far from desiring that he shall thereafter at all times perceive a certain olfactory sensation of a certain intensity. What he desires is the establishment of conditions under which he can, when he pleases, experience such a sensation in a desired intensity. The prospective purchaser of a violin does not wish to hear incessantly all the notes which the instrument is capable of producing. The experimenter with colored papers would be altogether baffled if the perceived colors did not vary in characteristic ways according to the illumination. Because of our foresight, acquired through our observation of the laws of nature, we are interested not only in actual sensations, but also in the possibility of their occurrence. But, when all is said, the actual sensations exist, while the possible sensations do not exist.

The issue, I think we may say, is fairly and squarely met. But certain comments suggest themselves.

1. Suppose we accept outright the doctrine that the permanent thing, as distinguished from the passing complex of sensations, is a fiction, a manner of speaking. Nevertheless, fiction though it be, it is not to be lightly confounded with the sensation-complex. When Berkeley says that an *apple* is a "collection" of "a certain taste, smell, figure, and consistence," that have been "observed to go together,"³ he clearly contradicts his own principles. For according to his principles the word "apple" denotes, not any particular actual sensation-complex, but a whole system of possibilities—a fiction.

This may be said to be a question of words. It is so; but it is not, therefore, unimportant. The consistent use of words is an important condition of consistent thinking. Accordingly, we are not surprised to find Berkeley's greatest disciple, J. S. Mill, in a celebrated passage,⁴ correcting Berkeley's language and declaring the

² Cf. Berkeley's *Principles of Human Knowledge*, § 58.

³ *Principles of Human Knowledge*, § 1.

⁴ Chapter XI. of his *Examination of Hamilton*.

"material thing" to be a group of permanent possibilities of sensation.

2. In this connection we should bear in mind Mill's further criticism of Berkeley—apparently less well known than it should be, for the phenomenalists of to-day show no sign of having paid the slightest attention to it. Berkeley was distinctly in the wrong, says Mill, in holding that the laws of nature—at any rate, any laws of nature with which we are acquainted—are uniformities in the order of our sensations. And in this negative assertion Mill was undoubtedly right. With a few interesting exceptions (such as the phenomena of difference-tones), we are never able to say: "If I experience such and such sensations, I shall then, or thereafter, experience such and such other sensations." The determining conditions of our sensations always involve far more than our simultaneous or previous sensations. We have not even any reason, apart from a highly speculative theory, for supposing that all the previous sensations of all animate beings put together are a sufficient ground for a single new sensation. Accordingly, Mill held that the uniformities which we call the laws of nature obtain, not between sensations, but between things and events—that is, according to his theory, between groups of possibilities of sensation and the changes that take place in them.⁵

With this modification of Berkeley's system, the question of the relation between primary and secondary qualities passes into a new phase. The old argument, that the difference between these qualities is nugatory since they are alike qualities of things that exist only as they are perceived, falls to the ground. They are qualities of things, which may indeed be fictions, but which are conceived as existing independently of the actual sensations of any one.

But, with this new understanding of the matter, we find the distinction between primary and secondary qualities still obliterated. Both are regarded as possibilities of sensation. To be green, to be sweet, to be straight, or to be a foot long is equally to afford characteristically different sensations under different determining conditions.

⁵ While the plain truth of Mill's statement, that the laws of nature, as we know them, do not describe the order of our actual sensations, has not been denied by any one who has seriously considered it, we sometimes find it argued that these laws must ideally be *reducible* to such a form, and, indeed, ultimately to the form of uniformities in the order of the sensations of each separate individual that is capable of knowing them. The reason alleged is the psychological one, that (as it is affirmed) the only direct observation upon which we could found a knowledge of an "external" world is that of the order of our sensations. The point is of no importance for the purposes of the present study; but it is now pretty generally recognized that this alleged reason is of extremely doubtful weight. Cf. G. A. de Laguna, *Sensation and Perception*: II, *The Analytical Relation*, in this JOURNAL, Vol. XIII., pp. 617 ff.

Will this account hold? I believe that we may say that it does hold for the secondary qualities, but that it is not wholly accurate and is far from sufficient in its application to the primary qualities.

1. That the secondary qualities are not single sensation-qualities, but groups, or systems, of possibilities of sensation, appears clearly from the kind of test that we apply in determining whether two things have the *same* quality.⁶ For this purpose it is not sufficient to have received the same sensation from the two things. In matching colors, for example, it is not a sufficient proof of identity that they be indistinguishable under some one condition of illumination. The thread and the cloth that match in the rear of the store, do not *really* match (we say) unless they continue to do so when they are carried to the front. The colored papers that seem alike in a golden light are not really alike unless they equally seem so by white light. The strands of wool that are all "red" to the color-blind observer, or to the indirect vision of the normal observer, are not red unless they are so to normal direct vision.

With these facts in view, the suggestion has often been made, that a "real" likeness means likeness under a certain standard condition and for a standard observer; and it has been explained that the standard condition means either the most frequent or otherwise the most important condition; while, similarly, the standard observer means the man whose perceptions agree with those of the vast majority. But the fatal difficulties in this view have been as often urged. What is the standard illumination? The light must be white, of course; but of what strength? A good match at one intensity of illumination (at twilight) may be a noticeably poor match at another intensity (at noon). Moreover, an observer possessed of an unusually delicate color-discrimination, who saw differences of hue where the vast majority of men saw none, would not be set down as a poor observer. On the contrary, he would be credited with perceiving real differences that had escaped most other men.

The perfect color-match is a match that holds for every observer under every condition of illumination. The reason that some illuminations and some observers are tolerably good standards is that any match which holds for them will in all probability hold for any illumination and any observer that is likely to be found. Colors that are the same by daylight will, in general, be the same by lamplight; colors that are the same at noon will be the same at twilight; colors that are the same for normal direct vision will be the same for color-

⁶ This method of approach is familiar to mathematicians. When they see no direct way of defining a function, they often announce, instead of a definition, the condition under which this function remains the same for two different values of its variable. Cf. L. Couturat, *Les Principes des Mathématiques*, pp. 42 ff.

blind vision—but not *vice versa*. As we say, we *see colors better* in the light than in the dark.

Similarly of the other sense-departments. Two locomotive whistles may seem to give very different notes when one is approaching and the other is receding; but the notes may really be the same. They are so if they seem the same when the locomotives are both approaching or both receding at the same speed. Wintergreen and peppermint lozenges that taste alike when one has a cold, do not taste alike under every other condition; hence they do not taste alike *simpliciter*. In general terms, to have the same secondary quality means to afford like sensations under every condition to which the two things are subjected.

Accordingly, a secondary quality may be defined as a capacity for affording sensations belonging to a certain sense department, the sensations themselves varying in quality or intensity with the varying external or physiological conditions.

In appreciating the significance of this definition, we must refrain from certain questions, which from our present standpoint are clearly impertinent. We must not ask, for example, whether a capacity to do something does not always rest upon some constant structure, and whether the “real” color, taste, *etc.*, of the object must not, therefore, be some such structure. For all this matters not at all. The secondary quality, as we conceive it, and as, on the basis of our observation, we attribute it to things is a capacity, or potentiality. In order to believe that blood is red, it is not necessary to have any theory as to the structural basis in the object, of the various color-sensations by which the redness may be perceived. In order to attribute sweetness to sugar, it is not necessary to have any theory as to the structural peculiarity in sugar that makes it taste sweet; and, indeed, in this case it is notorious that no generally acceptable theory has been proposed—yet our conception of sweetness is not the less clear for that. Let redness and sweetness have what basis they will, or none at all. Let them, together with the things to which they belong, be fictions. It remains true, that, as predicates in our common judgments, they are, in Mill’s phrase, possibilities of sensation.

2. How far can a similar account be given of the primary qualities?

On a first examination, it may seem that an almost precisely similar account must be given. A length of an inch is a determinate possibility of sensations, namely, such sensations as those by which, under various conditions, we perceive that a thing is an inch long. Straightness, roundness, squareness are permanent possibilities of

the sensations which we experience when we perceive that things are straight or round or square.

The former test of identity remains applicable. For two objects to have the same size or shape, it is not sufficient that in a single observation they seem the same. That may happen, and yet one may be a hundred times larger than the other, and very different in form. The identity must hold for any and every observation, under any identical condition to which they may be subjected.

It may, indeed, be fairly objected, that the primary qualities are distinguished by the important part played in their perception by symmetry and rhythm—characteristics not of the sensations themselves individually, but of “colligations” of sensations. In this respect they are analogous to the musical intervals, which are perceived independently of the absolute pitch of the notes. It may also be urged that the primary qualities are possibilities of sensation of more than one kind: vision and “touch,” at least. This last, however, may be a less radical difference than we commonly suppose. In most perception of extension and figure, kinesthetic sensations are principally involved, the alterations of color and pressure serving as guides for the movements by which the kinesthetic sensations arise. There is, to be sure, a perception of extension and figure by the unmoved skin, as there is also by the unmoved eye; and such perception, it seems, may enter in varying degrees into the total perception when the skin or the eye is actually moved. But it is markedly inferior, and it is quite possibly derivative from former experiences of movement. Kinesthetic sensations also enter largely into the perception of temporal intervals. From our present knowledge it would be too much to lay down the general proposition, that primary qualities are potentialities of kinesthetic sensation; but such a theory would not be manifestly false.

3. If the primary and secondary qualities are so far alike, what essential difference is there between them?

When the qualities of things are spoken of as possibilities of sensation, it must not be forgotten that this possibility, like every other, is relative—relative, that is to say, to the further contingent conditions which are necessary to make the sensations actual. Among the necessary conditions is the physiological organization of the senses of the possible observer. Equally essential conditions are the spatial and dynamical relations between the thing and the observer. As these relations change, the sensations change in quality, intensity, or both. Moreover, these relations are in this manner determinate conditions not only of the sensations of one department, but of the sensations of all departments.

For this reason the description of the primary qualities as possi-

bilities of sensation is insufficient. It fails to take account of the fact that in the determination of sensations the primary qualities have a double significance: first, as the potentiality of the sensations by which the primary qualities are themselves perceived, and, secondly, as determining conditions of all sensations whatsoever.

4. The primary qualities of things are connected together by the body of uniformities which constitute the sciences of geometry and mechanics. Not only are the spatial and dynamical relations of bodies to the perceiving organism important as determining the actual sensations experienced; but the spatial and dynamical characteristics of bodies constitute a vast system within which mutual determinations of the highest degree of specificity obtain.

In contrast to this, let it be observed, not only is there no known determinate order in the succession of our sensations (as Mill pointed out), but there is no known uniformity in the succession of secondary qualities in any thing or in any combination of things. With respect to the simultaneous occurrence of secondary qualities, there are some known laws; for example, what is very hot is painful to the touch, or, what is very dark is not deeply colored. But, though secondary qualities enter freely into laws of the succession of phenomena, they never stand alone there. Things of various kinds, taken in the concrete, or primary qualities of things must enter also. For example, we may say that what is hot warms what is cold—if the warmth is not intercepted by some intervening body.

5. Geometry and mechanics have their basis in the act of measurement, of which the case of linear measurement (measurement of lengths and distances) is typical.

The judgment of lengths takes place in various ways. One thing may by a direct comparison be seen or felt to be longer than another; and the greater length may accordingly be regarded as the possibility of the characteristically different sensations experienced in perceiving it. But there is one mode of judgment which is of prime importance, because upon it the system of geometry directly rests: measurement. This consists essentially (as I have elsewhere remarked⁷) in determining whether one or both of the bodies that are compared can, or can not, be brought into simultaneous contact with two others—generally, in practise, two parts or ends of a single solid, which may be called the measuring-standard. If one of the compared bodies is capable of this, and the other is not, the former is the longer. If neither can, by reference to any discoverable standard, or by any indirect method based ultimately on measurement, be shown to be the longer, they are presumed to be of the same

⁷ In "The Nature of Primary Qualities," *Philosophical Review*, Vol. XXII., pp. 506 ff.

length. The length of an object, from this point of view, is thus not a quality which it possesses in direct relation to a perceiving organism. It is a property which consists in mutual relations of objects, with only an indirect reference to possibilities of sensation.

In performing the experiment or series of experiments which measurement requires, it is important that the standard employed shall not perceptibly change in size or shape. Otherwise the results may be far from trustworthy. But, given these conditions, it is found that the results of measurement are remarkably uniform. It is then, in general, found that if measurement by one standard shows *A* to be longer than *B*, no other standard shows *B* to be longer than *A*.

There are, however, exceptions. Even when no relevant change in the standard has been observed, it sometimes happens that an earlier measurement shows one of two objects to be the longer while a later measurement shows the other to be the longer. When this occurs we preserve our scale of lengths by supposing that an actual change has nevertheless occurred, either in the standard or in one of the compared objects. Which has been affected we leave to further measurement to determine.

In this way we conceive of a scale of permanent lengths which are, at any moment, independent of the possibility of perception. Strictly speaking, the existence of these lengths is not demonstrated; for the same ground on which we do not permit the scale to be destroyed by any single contrary observation, prevents us from establishing it. If unperceived changes have occurred when our measurements disagree, may they not have occurred when the measurements agree? Nay more; as we become sophisticated, and realize that our standards do change in various known ways and may well be changing in many unknown ways, the scale of lengths is still undisturbed. Though no single experience can bear evidence for or against it, the whole course of our experience bears ample testimony to it; for where no change in length is perceived in objects under investigation, our measurements with or upon them reveal, in general, only slight or slow changes.

6. Thus lengths, and with them the whole system of concepts of metrical geometry, acquire the characteristics which, in both ancient and modern times, have so fascinated the most logical and the most mystical of thinkers—not always distinct sets of men. Lengths, as thus conceived, are so far from being relative to the physiology of human or animal perception, that they can not be perceived. They have, indeed, a new relativity: they are relative to each other. A foot is twelve inches, and it is one third of a yard; while an inch is one twelfth of a foot, and a yard is three feet. But the old rela-

tivity is no more. The lengths that change not, though all standards of measurement change, are obviously independent of our perceptive faculties. They have the eternal self-subsistence of the Platonic idea.

Meanwhile, as possibilities of sensation, the lengths are far from having the new relativity. A foot, to the eye or the hand, is a pretty definite thing. One rarely runs any risk of confusing it with an inch or a yard. It is as different from them as red is from green, or middle *C* from the *G* above it—shading into them by indefinable gradations, but perfectly distinct none the less.

It remains true that the conception of the eternal and self-subsistent length has its origin in lengths as possibilities of sensation, and it has its utility in its relation to such lengths. As Plato said of his ideas, we may say of the ideal lengths: though never adequately represented by any perceptible thing, they are very suggestively “imitated.” Grant that the length of a standard platinum rule is in all probability constantly changing, even though the temperature be kept constant. Not only are all such changes imperceptible, but, treating the rule as if it had a constant length, we find in our results no inconsistencies that can not be charged to the clumsiness of our manipulation. The ideal length is always independent of the actual particular bar of platinum. If it were not, there would be no sense in saying that the bar’s length varied with the temperature. But the ideal length owes its place in our science to the function which it performs as an instrument of our analysis of phenomena. By describing the changed behavior of the bar of platinum, when the temperature has been allowed to vary, as a transition from one length to another—the lengths themselves being unchangeable and, indeed, eternal—we bring simplicity and consistency into our world-view.

7. Lengths have thus a double character; and I believe that the reader will agree with me that the like can be shown of the other primary qualities of things. On the one hand, they are possibilities of sensation; on the other hand, they are a system of ideal magnitudes, determined only by their relations to one another.

A modification of the ordinary terminology is thus suggested, which I believe would be very advantageous. Instead of distinguishing between lengths, *etc.*, and colors, *etc.*, as primary and secondary qualities, it would be well to recognize that there is both a primary and a secondary quality of length; and similarly of volume, shape, position, duration, motion, mass, force, *etc.* A mass, for example—say that of a tennis-racket—is a potentiality of sensations. One can learn to recognize it pretty accurately. But masses are also, as Poincaré pointed out, “*coefficients it is convenient to introduce into*

our calculations."⁸ His mistake was in supposing that this double nature was peculiar to the special concepts of mechanics and did not equally belong to those which mechanics shares with geometry.

The two orders of lengths, like the two orders of masses, remain intimately correlated. The geometrical length, being free from relativity to our modes of perception, is conceived as the length of the object as it is in itself, and hence as the actual underlying basis of the secondary length, as a mere potentiality of sensations. The physical mass of the tennis-racket is conceived as the basis of the mass as it reveals itself in the sensations we experience in wielding the racket. In general terms, the primary qualities are conceived as actual conditions of determinate possibilities of sensation, the corresponding secondary qualities being these possibilities as such.

We are at once reminded of a question which we previously dismissed as irrelevant: whether the secondary qualities commonly so-called have not their actual objective bases. It is, of course, generally recognized that they have. Colors and tones, warmth and cold are referred to definite physical conditions; and though these are largely unknown in the case of tastes and smells, we do not hesitate to assume their existence. May we not, then, recognize primary as well as secondary qualities of redness, acuteness, warmth, and sweetness?

I think that we may. But if such a revision of our terminology were carried through, we should have to guard against the suppression of another important distinction.

Whether or not physics and chemistry are ultimately reducible to mechanics, all physical and chemical *measurements* are in mechanical terms. The objective colors, tones, *etc.*, are measurable only in terms of the primary qualities, commonly so-called. In part the physical bases of the perceived qualities are unknown to us. In part they are at present unmeasurable. But in so far as they are measurable, the above statement holds. The objective color we specify by wave-length, refractive index, *etc.*; the objective pitch by frequency of vibration; the objective temperature by the volume of a fluid, *etc.* To this extent the objective conditions of the perceived colors, tones, and temperatures merge with those of perceived figures and forces; and the old primary qualities remain in a special sense primary after all.

8. A word may be added (although I have already written on the subject in this JOURNAL⁹) with reference to the working-assumption which we have made: that things, their secondary qualities, and *a fortiori* their primary qualities are fictions. As I view the

⁸ *Science and Hypothesis*, Halstead tr., p. 76.

⁹ Vol. XII., pp. 453-5.

matter, such assumptions are not to be regarded with the utmost seriousness. The empirical demonstration of what is or is not given in experience is notoriously difficult. It may even be impossible. Perhaps the very distinction between the given and the inferred or constructed is not altogether valid. What appears as fact and what appears as fiction in our theories, depends upon what is originally assumed as datum. In the above discussion, the sensations were taken over from Berkeley as the primary data of our construction; and, for my part, I do not know that any other choice of a starting-point would have been better. What we may hope to be of real significance in such arguments is the interrelation of concepts that is developed, an interrelation which may reappear, with altered perspective and with necessary modifications of detail, in more adequate constructions. There is no claim to be made for the precise order of the development.

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CONCERNING THE NATURE OF PHILOSOPHY

THE following paragraphs offer the suggestion that philosophy is simply science itself as distinguished from the sciences; and this suggestion is made with reference to the objection so regularly brought against "self-psychology," that the latter is a philosophical inquiry instead of a scientific one. In other words, I suggest that all scientific inquiry, when it proceeds carefully enough and examines its beginnings, necessarily turns into philosophy. This statement hardly differs from that of one of the accepted views of philosophy, *i. e.*, that philosophy examines the presuppositions and the implications of the particular sciences with a view to harmonizing them in a comprehensive whole of knowledge. My idea is, however, rather the obverse of this view; at least I begin differently. My point is that philosophy is identical with science itself, and that the more definite and accurate and rigorous one attempts to be in studying science, the more surely will one be studying not only philosophically, but philosophy itself. The very naming of science as such indicates a belief in a single world of facts falling under a single set of laws. How there could possibly be anything in the realm of thought beyond science as thus defined, I can not conceive.

The sort of thing, for example, that is suggested as beyond science is the Kantian doctrine of the transcendental ego. But how does Kant discover this ego? How does he discover any unity, transcendental or empirical? Obviously, it seems to me, by thinking. And to think is to turn one's attention to facts and to attempt to organize and arrange those facts so that they may be conceivable

together. Kant appears to find his way back out of phenomena to what must underlie phenomena—to categories. But what are these, so far as they *are* at all, but the facts of Kant's own mind as discovered by that mind? Try as he may, Kant can be more than empirical only in that he turns from more easily observed and more obvious phenomena to the very complex phenomena of his own organizing intelligence. In other words, he definitely follows the method of science; he observes and experiments with "inner" or even "transcendental" facts. And if Kant's Transcendental Unity is at all, then it is part of science, empirically discovered.

The differentia of science and philosophy are not of the sort that most idealists appear to acknowledge. Philosophy, if it is more or other than science (not than the particular sciences), is purely fanciful and unscientific, precisely what it always objects to being called. But there are vast fields—so we may suppose, at least—that the particular sciences have not yet appropriated. And when we are most rigidly and fundamentally scientific, we are constantly forced into these fields—or rather into this undivided and unlimited area—into science itself. And *then* we are rightly said to be thinking philosophically.

So it is that psychology is true to itself, or at least true to science (as distinct from an already defined and delimited *psychological* science) when it objects to being defined in any way which leaves out the central fact upon which it is based, namely, the consciousness of self, without which psychology surely would disappear along with—well, the universe, I should suppose. But at the same time such inquiries as keep insisting upon this basic fact may well be the beginnings of a particular new science or of various new sciences, allied, perhaps, to current psychology of the orthodox structural, or functional, or behavioristic schools. It may well be the case, on the contrary, that this connection with what is conventionally known as psychology is more remote than has so far appeared. But, at least, I should say that when self-psychology is objected to as philosophical, the real significance of the objection is rather different from the apparently condemnatory meaning of the objector.

If self-psychology is philosophical, it is because it is trying to be truly and fully scientific. The endeavor of any thinker, however, to be *purely scientific* is destined to certain failure, for what is most fundamentally scientific is *science* instead of a part of any one particular science; or if it is dwelt on long enough and is the right sort of material, namely, that which the thinker in question is able to organize, it becomes not just science, but one particular science with its own particular limited field. In other words, the attempt to be thoroughly scientific may well lead to a new special science; but

until this special science becomes defined, all speculation in the general field of thought out of which it emerges is that most fertile of all the parts of thought, *i. e.*, philosophy itself.

Philosophy is thus the concrete embodiment of science in general. *Science*, as a general term applicable to all the sciences, denotes just these various sciences; but it connotes scientific method in the very sense in which all philosophy aspires to be scientific. Historically, it would even be more appropriate to say that the modern connotation of the term *science* is expressed in the ancient term *philosophy*. Thus when modern scientists engage in science in general, or study what they call the foundations or the grammar of science, they are doing what has for centuries been called philosophizing; and whether they like it or not, they are what is regularly and traditionally called philosophers. *Science*, as a general term, has precisely that indefinitely great extension that reduces its intension to the vanishing point; and the failure of the scientist to arrive at abstract science itself is inevitable. But we are not willing to call the most fundamental and important part of our thinking a failure, and we name it philosophy. The ancient philosophers were many of them avowed scientists. Modern scientists, as they increase in breadth of view and power of thought, tend to become philosophers. And it seems to me not unreasonable to see in philosophy a name for science itself; an abstraction, to be sure, but an abstraction which the most concrete scientific facts force us into. While we remain so situated, we rightly maintain our self-respect by embodying the abstract with a name—we become philosophers.

To use a figure, we become the votaries of a god, the seekers after a divine essence, knowledge itself—an essence which never materializes except in such concrete forms as reveal, one at a time, and in endless succession, its numberless and inexhaustible aspects, but never its central self. Genuine worship of any of these aspects (any sort of scientific research) gives the worshiper an intimation of the central and original essence; but worship of the sheer essence, while it may lead inwardly to meditation or even philosophic rapture, is outwardly successful only when it discovers a new incarnation of the divinity. And such outward success is philosophical failure, for the philosopher demands the very essence itself, and all incarnations are but partial.

Perhaps the figure weakens the point. But it seems to me to define my conception of philosophy and to identify it with science in general. And while, in the nature of the case, I can not identify the central fact of self with the “divine essence” of knowledge, it seems to me not *mere* speculation to say that the self of self-psychology, instead of giving us access to a field of *unscientific* philo-

sophical speculation, rather points us to the very source of all science, which is indeed what is called philosophy, but which is no less scientific than laboratory work in electrical measurements or color perception.

On the basis of such a conception of the continuity, if not the identity, of science and philosophy I can at once hiss the transcendentalists, applaud the scientists, and yet be myself a philosopher, regarding philosophy and the philosophical method as the most valuable either of mental achievements or of intellectual occupations, and the most purely scientific. And in thus saving my own intellectual integrity I seem to myself to offer to scientists and philosophers a ground of agreement and a basis for mutual respect, without at all giving up their traditions or their convictions. Such agreement is much to be desired, for their present state of independence results in such ridiculous misunderstanding and such disrespect for each other that it is a danger to their own thinking. To despise the empirical as beneath you is like despising the earth itself, the source of life; but to despise the "philosophical" is only another way of despising that same earth; for any science is fundamentally scientific only when it is philosophical; philosophy is, after all, its only source of meaning.

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SOCIETIES

NEW YORK BRANCH OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

THE New York Branch of the American Psychological Association met in conjunction with the Section of Anthropology and Psychology of the New York Academy of Sciences at Columbia University on November 26. The following papers were read:

Psychological Examinations of College Freshmen.—Miss EDITH CAROTHERS.

The purpose of the investigation is first, to establish norms and standards of performance in mental tests for Barnard freshmen, and second, to furnish information of aid to college authorities in solving problems of administration, and of aid to students in giving them a knowledge of their abilities and aptitudes. A series of twenty-one psychological tests was selected and tried out on a group of 100 Barnard freshmen during the year 1915-16. The tests used were: Coordination, Tapping, Cancellations, Number Checking, Color Naming, Directions, Opposites, Verb Object, Mixed Relations, Word

Building, Word Naming, Knoch Cube, Digit Span, Word Memory, Recollection and Recognition, Substitution, Trabue Completion, Information, and Vocabulary. The tests were given individually and the time required to test each freshman was one hour.

Norms and standards of performance were found for the Barnard group in all the tests. An individual report was sent to each student who took the tests. This consisted of two blanks, giving a description and interpretation of the tests with whatever vocational significance each test possessed. A third blank indicated the standing of the individual student in each test together with the average standing in each test for the entire group of 100 freshmen.

Inter-test correlations were calculated. These were not very high. The highest correlation was between Cancellation and Word Naming (+.77). There were very few minus correlations. The extent to which one test correlated with every other test was determined and Word Naming was found to be the best test according to this classification. The five tests that ranked next in excellence were: Opposites, Cancellation, Number Checking, Color Naming, and Verb Object. The results of this investigation are considered to be tentative and were reported for their suggestive value.

Distribution of Time in Learning a Foreign Vocabulary.—ROBERT A. CUMMINS.

The purpose of the experiment here reported was to compare two sorts of distribution of time in the learning of large groups of foreign words—*A*, a schedule in which the study-periods are of equal length, and *B*, a schedule in which the length of the study-period decreases progressively, with an increasing interval of time between the periods.

The subjects were five graduate students in Teachers College, two women and three men, including the author.

The material used consisted of two lists of French words of 150 words each, selected by chance from 1,200 ordinary French words.

The study was begun on October 29, 1917 and continued through November 13, the test being given on November 14.

By the plan of the experiment an equal number of study-periods, (6) spread over the same length of time (lacking but one day), was devoted to each list. The total amount of time spent (120 min.), the average length of the study-periods (20), and the total number of repetitions of the associations (24) were the same for both schedules.

The equal-schedule consisted of 6 study-periods of 20 minutes each with a two-day time-interval between, while the reducing-schedule consisted of 6 study-periods as follows: 40, 30, 20, 15, 10, and 5 minutes, with decreasing time-interval.

Uniform instructions equalizing in so far as possible all the factors save that of distribution of time were followed.

Three of the subjects did better with the Reducing schedule, two did better with the Equal schedule. The total number of words learned by the five subjects, however, was 562 for the Equal schedule and 561 for the Reducing.

In a subsequent test given one week later, the same three subjects did better with the Reducing schedule, the other two doing better with the Equal schedule. The total number of words retained by the five subjects was 538 for the Equal list and 556 for the Reducing.

When does a Baby begin to Think.—G. C. MYERS.

About twenty-five years ago H. W. Brown collected a number of notes on children from two years onward,¹ which, as Thorndike has pointed out, show children as early as two years "making inductions and deductions after the same general fashion as adults." The writer presented a few notes from his baby as follows: (The numbers indicate days.)

178—J. looked back and forth from my face and moving hand as I sharpened my razor.

352—Failing to make a sound on the piano he placed A.'s hands upon the keys.

420—Turned about to examine an obstacle over which he had stumbled.

810—Failing to reach a desired object on the table, he ran directly to a box filled with toys, emptied them, carried the box to the table, inverted it and got what he wanted. This box had never been used for that purpose.

915—To question, "What will Daddy do with you for that?" he replied, "Daddy school."

1134—"Wagon all wet; must have rained last night."

Samples of questions asked by the child at various ages follow:

1010—Who made the pond?

1024—Who put the tail on the fish?

1036—Where does milk come from? sugar? ice? meat?

1050—Why you come here for?

1121—Why that fish have a tail?

1131—Does it hurt to stick pins into the doll?

1166—Who made you?

1216—When I was a big boy where did Daddy come from?

Samples of Generalization.—In the dawn of his speech development (which was rather slow) *chická* was used to mean, chicken, chicken coop, wire netting, all kinds of fowl and birds, eggs, to gather

¹ Ped. Sem., Vol. II.

the eggs, to feed the chickens, chicken feed, pail from which the chickens were fed, any kind of pail, sounds by the chickens, cooked chicken, and all kinds of meat and fish.

Likewise common objects were classified in play (without suggestion or training):

313—Dragged one of my shoes across the floor and placed it beside a pair of his; repeated for the second shoe.

461—Punished once for throwing angular blocks he now throws only spherical things as ball, apple, and potato.

562—Picked from a set of blocks all the hemispheres and laid them side by side.

643—Put blue, red, green, and white spools on pegs of their respective colors. (A suggestion for testing early color perception.)

Since the latter part of his third year at least, all his play has been marked by purpose.

594—Showed pretty certain evidence to mean that one of several pencils was shorter than the rest.

930—Looking from one to another of several like faucets said "same."

1281—"This rocking-chair same as victrola, only it has no door."

2—Always ceased crying when placed in his mother's arms, in which position he received food. Not so when in others' arms.

331—Laughed aloud and clapped his hands when mother brought his coat.

Contrary to Sully, Perez, King and others, such reactions do not presuppose images necessarily; rather they indicate *short-cut associations* or, what some may prefer to call *conditioned reflexes*. Doubtless all reasoning is explicable in these terms.

Elemental reasoning is present at birth, if not at some time before. Gradually by the second or third year the more complex type of reasoning, common to adults, but hardly common to the lower animals, has evolved.

A New Clinical Test for Temperature Sensitivity.—E. L. CORNELL.

This paper was a report of an experiment intended to standardize a test of the reaction-time to cold and hot stimuli simultaneously applied—a test which, it is hoped, will prove of diagnostic value in some types of sensory dissociation. Five normal individuals were carefully examined upon forty areas of the skin surface, in regard both to the double, simultaneous stimulation, and to separate hot and cold stimuli. It was found that a majority of the responses to the double stimulation elicited first cold, then hot; although the reaction for the two sorts of stimuli separately showed no clear time-difference. The proportion of responses occurring in the order "Cold-Hot"

varied considerably among the different subjects and according to the area tested—the abdomen and back having the largest number and the hands and arms the least. The reaction-time for cold, measured graphically by the experimenter, was about 1.0 second; hot followed about .4 sec. later, except on the feet and legs where the median interval was .8 and .6 sec., respectively.

Psychological Tests upon an Expert Marksman.—A. I. GATES.

The world's champion marksman at 200 yards off-hand shooting with 100 consecutive shots, and 10 university students as a control group served as the subjects for this experiment. In tests for visual acuity, control of eye movements, *etc.*, the expert showed no superiority over the students. In tests of steadiness of gross muscular control, the expert was markedly superior. In all such tests he was less subject to suggestion and distraction. In tests of steadiness and precision of movement the expert was but slightly superior to the average of the students; in the speed of movement he possessed but average ability. Tests with a device constructed for the purpose showed that the expert possessed greater control of his trigger finger. The most significant differences appeared in specially arranged tests in which the Hipp chronoscope was used to measure the reaction of pulling the trigger. The stimulus for the reaction consisted of the coincidence of two pieces of white metal, one piece being stationary and approached by the other sometimes in a uniform and sometimes in an irregular manner. This approximated the wavering of the sight of a gun about the target. In these tests the expert in no case made premature reactions, while the 10 students average about 6 premature reactions out of 50; the expert was not markedly superior in *speed* of reaction, but decidedly so in the *uniformity* of his reactions. The uniformity and precision of co-ordination of eye and hand afforded a basis upon which habits of accurate shooting could be established.

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REVIEWS AND ABSTRACTS OF LITERATURE

A Scale of Performance Tests. RUDOLF PINTNER and DONALD G. PATERSON. New York: D. Appleton and Company. 1917. Pp. 218.

In reducing to a commensurable series a number of test methods independent of language, the authors have done service that their colleagues in mental measurement will not estimate lightly. Grow-

ing out of work with deaf children, it readily extends itself to language difficulties of all kinds. The tests in the scale are fifteen in number, as follows:

1. Mare and foal (Healy, omitting geometrical forms).
2. Seguin Form Board (after Goddard and Twitmeyer).
3. Five-Figure Board (Paterson).
4. Two-Figure Board (Pintner).
5. Casuist Form Board (Knox).
6. Triangle Test (Gwyn).
7. Diagonal Test (Kempf).
8. Construction Puzzle A (Healy).
9. Manikin Test (Pintner).
10. Feature Profile Test (Knox, Kempf).
11. Ship Test (Glueck).
12. Picture Completion Test (Healy).
13. Substitution Test (Woodworth and Wells).
14. Adaptation Board (Goddard).
15. Cube Test (Knox, Pintner).

Governing factors in this series were (1) selection of tests seeming to call for "different types" of response, (2) presentation of relatively new situations, (3) elimination of verbal instructions for the tests. If verbal instructions are used with the normal child, it is simply because it would be unnatural not to do so; their omission does not change the essential character of the test. Detailed account of each test is given, and another printing might well complete its intelligibility to the beginner by illustrating the Goddard Adaptation and the Seguin Boards. It is noticeable that the tests are largely of the form-board type. A time limit of 5 minutes per test is generally assigned; perhaps D. N. C. would be advantageously replaced by some simpler convention for "did not complete."

There follow discussions of the factor of social status, and of the numbers necessary for norms. Graphs are presented showing relatively slight changes induced by adding further cases after certain limits are reached. Three types of standardization are distinguished; the simple determination of norms, their classification in an age scale, and their distribution by the percentile method.

The standardizing work of the authors is first presented in tables giving the complete distribution of scores, and by graphs which indicate the median and the 25 and 75 percentiles. Later tables give the ten percentile distributions at each age for all the tests. A suggestion is thrown out for using as the criterion of mental age the simply obtained median of mental ages in the various tests. Determining it shows the "scattering" of the subject.

Critical attention is given to scoring policies, and the work nowhere appears to better advantage than in the chapters on the Year Scale, the Point Scale, and the Percentile Method. The authors have in mind a similar goal to that set by Yerkes, a series of tests based upon the concept of developing functions having commensurable values through more or less of the whole developmental period. That performance in a test is regarded as distinctive for a certain age, which is reached by 75 per cent. of the individuals at that age. As tests of the present type show many degrees in quality of performance, it is possible to use most of the tests at many different ages. As is illustrated, suppose that the 25 percentile in a test at age seven is 31 and at the age eight it is 18. This means that at age seven the upper 75 per cent. make scores better than 31; therefore, 30 is taken as one limit and this limit extends down to the limit of age eight. All those with scores between 30 and 18 have seven-year credit, since 75 per cent. of seven-year olds make scores better than 31; but if they score better than 18 they receive eight-year credit.

In adapting the standardization to a point scale, three principles of allotting points are discussed. One may observe the number of breaks in the age curve of a test, and assign as many points as there are such breaks. The objection is raised that this does not apportion the amount of credit to the difficulty of the test. One may allot an equal number of points to each test; for example, if 20 points are allotted to each test, and a test shows five progressive types of performance, 4 points for each type is credited. The poorest type of performance scores 4 points, the next 8, *etc.* The most approved suggestion is giving to each type of performance a credit proportional to the chronological age for which the performance is distinctive. Thus, "since average five-year-olds can do two moves on the adaptation board, we must give a score of 5 to two moves on this board; for four moves on the board we must give a score of 6, since four moves is the average performance of six-year-olds."

The work is calculated to bring out great advantages in the relative position method of scoring, of which the authors are fully aware. In dealing with children these advantages have been obscured by the convenience and immediate significance of age norms, though the method is patently indispensable where development with age has ceased to be a governing factor. The comparative steps here used are ten-percentiles, which give a practically sufficient picture of the distributions. The child's ability can be expressed as that of a 10, 20, 60, or 80 percentile child of his own age. "Constant use of the percentile method would soon lead us to attach very definite meanings to such terms."

A point of detail, but a good one, is the correction of a time score for errors by adding to it a percentage of itself based on the number of items in the test. In a fifty-item test, for example, "each error is counted 1/50 of the total time for the test." So small a proportion, indeed, barely penalizes the errors at all. The weight to be given errors must vary with different kinds of experiments, but three times the requirement for an item of correct response would seem a minimum.

The value of the work is independent of any particular concept of intelligence, but some comment on this will not be out of place if the authors are correct in quoting as "generally accepted" Stern's definition of intelligence as "the general capacity of an individual consciously to adjust his thinking to new requirements; general mental adaptability to new problems and conditions of life." The first half of this definition is unexceptionable, but the second is hardly consistent therewith. The intelligence scales fit the first part but too well to fit the second, it being notorious that complete failure of social adaptation is possible in the presence of normal or even supernormal *IQ*. It is Mr. Facing-both-ways who formulates a definition of intelligence in terms of what can be measured experimentally, and then interprets that intelligence as equivalent to the whole personality. Intelligence being conceived as that factor in human adaptations which is governed by cognitive and conscious elements, we have in the scales a measurement of intelligence in its purest form. They tell us not what the subject is, but they do tell us what he knows. And through analyzing this intelligence as it is not analyzed by actual life, they perform what is, indeed, the primary function of scientific experiment. They analyze one factor in the personality which in ordinary life is combined inextricably with emotional, volitional, unconscious factors. Says the *IQ* to the imbecile, "You are old enough to know better;" and to the psychopath, "You know better than to act the ten-year-old."

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Philosophy and the Social Problem. WILL DURANT. New York: The Macmillan Company. 1917. Pp. x + 272.

This book, written in a popular style, is an earnest plea for the utilization of philosophy in the solution of "the problem of reducing human misery by modifying social institutions." This, the social problem, has been the basic concern of many of the greater philosophers (p. 1). It can only be solved with the assistance of men with the philosophical point of view, who interpret experience as a

whole, and can, therefore, effect a coordination which specialized scientists could not achieve alone (pp. 222, ff.). In performing this service philosophy, which needs more contacts in "the hard and happy world of efforts and events," will be quickened into fresh life (pp. 264-267).

The first half of the volume is devoted to an interesting discussion of several philosophers whose thoughts are significant for the social problem. From Socrates our author adopts the principle that emphasis must be placed upon intelligence; from Plato, that this intelligence must be employed by philosophical experts for the common good; from Bacon, that this intelligence is to be the product of scientific investigations; from Spinoza, that the avenue of this development of intelligence must be democratic. Just what principle he means to adapt from Nietzsche, to whom he devotes an interesting and appreciative exposition, and whom he apparently ranks above all other modern philosophers except Spinoza (p. 180, cf. p. 116) is not clear to me.

The author offers a practical suggestion that is not unworthy of serious consideration. He proposes that a "Society of Social Research" be organized, to consist of men eminent in philosophy and the various social sciences. Under the auspices of this society investigations into social matters would be made, for the purpose of ascertaining the precise facts upon matters of popular political controversy. The results of these investigations would be given to the world in untechnical language, and in time would come to have weight with the general public. Society in the future could in this manner remain democratic in its constitution, and yet benefit by expert information and advice.

The essay is well written, and should help to make the social value of philosophy better appreciated. It is obviously not meant to be exhaustive, and doubtless the author will be satisfied if his readers are led to seek further acquaintance with the philosophers whom he discusses, as well as with others, equally important, of whom the limits of his work did not admit of treatment.

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JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE, August, 1917. *Les attitudes mentales et la mémoire* (first article) (pp. 105-151): A. LECLÈRE. — A study of the importance of the notion of mental attitude for the psychology of memory. *Conditions et limites du bonheur* (pp. 152-170): G. BAUCHAL. — The ideas of virtue, religion, etc., are of an-

other order than that of happiness. Happiness consists of certain experiences, of which the chief, in the order of decreasing intensity, are the emotions, the sensations, sentiments, and finally others without distinguishing name. Our experiences, at a given moment, have a common measure. *Notes et Documents. La valeur de l'espèce dans la Biologie contemporaine*: ÉTIENNE RABAUD.—Species denotes “a morphological ensemble, having the value only of a conventional label, whose relative value must be determined in each particular case.” *Analyses et Comptes rendus. Clodius Piat, Leibniz*: LIONEL DAURIAC. ENZO BONAVENTURA, *Le qualità del mondo fisico*: FR. P. MARIE GRZEGORZEWSKA, *Essai sur le développement du sentiment esthétique*: CHARLES LALO. Pierre Bovet, *L'Instinct combatif*: E. CRAMAUSSEL.

REVUE DE METAPHYSIQUE ET DE MORALE. September, 1917. *Pour le progrès de la métaphysique* (pp. 489–516): CH. DUNAN.—Philosophy is nearer to life than science, for its aim is to systematize, that is, to organize, which is life itself. *L'individualisme de la Révolution Française et du Code Civil et la structure nouvelle de la vie économique* (pp. 517–568): G. MORIN.—“The living law of economic relations removes us progressively from individualist orthodoxy.” We are no longer concerned with the individual, but with individuals; not with the group, but with groups; not with the Nation, but with Nations. *De la Nécessité d'une réforme dans l'enseignement de la logique* (pp. 569–594): L. ROUGIER.—An examination of the definitions and divisions of formal logic in the light of the discoveries of the logisticians. *Enseignement. Pour un enseignement philosophique nouveau*: E. CRAMAUSSEL. *Questions pratiques. Réflexions sur la guerre expiatoire*: R.H.

Williams, Mabel Clare. Description of an Unusual Case of Partial Color Blindness; Stewart, G. W., Binaural Beats; Seashore, C. E., and Mount, George H., Correlation of Factors in Musical Talent and Training; Malmberg, C. F., The Perception of Consonance and Dissonance; Gaw, Esther Allen, A Revision of the Consonance Test; Seashore, C. E., and Ling, T. L., The Comparative Sensitiveness of Blind and Seeing Persons; Seashore, C. E., and Tan, Kwei, The Elemental Character of Sensory Discrimination. University of Iowa Studies in Psychology, Vol. XXV, No. 2. Princeton, N. J.: Psychological Review Company. 1918. Pp. 163.

NOTES AND NEWS

A MEETING of the Aristotelian Society was held on December 17, 1917, Dr. H. Wildon Carr, President, in the chair. A paper was read by Dr. G. E. Moore on "The Conception of Reality." Bradley asserts both (i) "Time is not real" and (ii) "Time exists, is a fact, and is"; and he evidently thinks that these two assertions are compatible. In truth, however, (i) ought to include, as part of its meaning, "There are no temporal facts," while (ii) ought to include, as part of its meaning, "There are some temporal facts"; so that the two assertions are not compatible. It is suggested that the reason why Bradley supposes them to be compatible is because he sees (a), what is true, that "Temporal facts are unreal" is compatible with "We think of temporal facts," and supposes also (b) what is false, that "There are no temporal facts" is incompatible with "We think of temporal facts." If (a) and (b) are both true, it would follow that "Temporal facts are unreal" could not include as part of its meaning "There are no temporal facts"; and that hence (i) must be compatible with "There are some temporal facts." In truth, however, there is no difficulty in supposing that (b) is false.

THE New York Branch of the American Psychological Association met in conjunction with the Section of Anthropology and Psychology of the New York Academy of Sciences on Monday, February 25. The following papers were presented: "The Influence of Practice on Correlation of Abilities," Miss Georgina Stickland; "A Tentative Formulation of a Psychology of Play," Miss Clara F. Chassel; "Families of American Men of Science," Mr. Dean R. Brimhall; "A Note on a Mathematical Prodigy," Dr. Lorle I. Stecher; "Redintegrative Mechanisms in the Psychoneuroses," Professor H. L. Hollingworth.

AT Swarthmore College the work in psychology and education formerly conducted by Professor Bird T. Baldwin will be carried on jointly by Professor Charles Fisher, of the department of education, West Chester State Normal School, and Professor S. B. Davis, of the department of education of Ursinus College.

DR. JOSIAH MORSE, professor of philosophy and sociology at the University of South Carolina, has been granted leave of absence for the duration of the war to become director of the Red Cross work in South Carolina and field director of the work at Camp Jackson.

A COURSE of five lectures by Dr. George LaPiana, of Harvard University, on "The History of Moral Theology in the Catholic Church" was completed at the Union Theological Seminary in January.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

AN APOLOGY FOR TRADITION

THE tourist interested in the places where old books are for sale notices very quickly a great difference between the shops of France and the shops of Germany, in which naturally, the supply consists chiefly of German books. In France, such an abundance of old books in gracious, simple bindings, the thin lines of gold gleaming discreetly along the edges! The noble type and the clean, firm paper show what sure workmen there were under the old régime and what excellent materials they had. But the German books of the same period are of quite a different sort, shabby covers and an impression that was called, in some school-classic I have read, a *Lösch-papiereindruck*. The word was, I believe, attributed to Frederick the Great, who could make comparisons.

Of course this observation is true only of old books. The German book-makers of to-day are equal to the best anywhere. But in a book-shop of Paris one gets a great impression of what these beautiful old editions signify,—a long sequence of humanized culture, of urbanity and judgment; in short, they testify to what is called, for lack of a better term, the “classical tradition.”

Let me illustrate it by a passage from Donnay’s play “The Return from Jerusalem.” The scene¹ presents the husband Michel, a Frenchman native to the traditions of his country, in conversation with a group of friends of his clever Jewish wife. They have foreign names, German and Polish, and it is clear that, not having their roots in the soil of France, they can not feel as Michel does toward *la patrie*.

Vowenberg says, “Oh, one’s country! Won’t you tell me what that means? You are going to say that your country is France. That is only a geographical expression. We are asking you for a reasonable definition.” To which Michel replies: “I don’t know whether my definition will strike you as reasonable, but it seems to me that one’s country is made up of glorious victories and heroic defeats, of fine examples of sacrifice and virtue. It means cathe-

¹ Maurice Donnay, *Le Retour de Jerusalem*, Acte III., scène I.

drals, palaces, and tombs—landscapes that one knew as a child and other scenes which, later on, have framed hours of sadness or of joy: it means intimate things, memories, traditions, customs—it is a language that seems the most sweet, it is an old song, an old proverb full of good sense, it is a rose that goes by the name of France, a bit of old porcelain. How shall I put it? Yes, one's country is all that—and much more."

This declaration that Donnay puts into the mouth of his character is supported by what a tourist feels after a fair acquaintance with Germany and France. Germany, just because she had no great tradition that created a natural loyalty, has been more forward-looking, and the word progress is used more naturally there than in a country where the seventeenth century was "*le grand siècle*" and where only a few years ago Joan of Arc was made a saint of the Catholic church. Descartes, could he observe and decide, might qualify his preference for systems made by one hand. What he most esteemed, a clear and distinct dialectic, appears now in an unexpected light. One great fault of the German thinking has been its dialectical character. An initial point of view has made it dogmatic and incapable of education through experience. The "classical" point of view, on the contrary, incorporates the lessons of experience in civilization, the principles of urbanity and social compromise, rules established by matured and tested culture, an empirical background of tradition, instead of the will defiant of experience. The "classical" point of view has a place for the chivalrous and social instincts, the justified conventions of national and international procedure. This instinctive sociability of the civilized man, as contrasted with the categorical *Ueberzeugung* of the one less at home in civilization, is, I think, what Boutroux refers to² when he indicates sentiment as a saving principle where an exclusive confidence in intellect and will have led thinkers so tragically astray. Sentiment, thus understood, leads to tolerance, something that neither the spirit of science in its stricter mood, nor the categorical imperative can justify philosophically, but which is characteristic of all real men and women of the world.

Although it is now nearly two years since the dean of French philosophers wrote the lectures referred to, the words of so humane and so mature a thinker have but gained in interest. Very late in our study of philosophy we are learning something of the German point of view, of what is, after all, an intellectual fruition. It is a point of view sincerely, even devoutly, entertained, articulate and thought through, a real philosophy that translates into action, and

² Emile Boutroux, *Philosophy and War*, New York: E. P. Dutton and Co., 1916. Pp. xi + 212. The preface is dated Paris, Dec. 24, 1915.

its prophets have been candid enough in proclaiming it. But philosophy does not nest exclusively in the writings of professors, and that may be why so many of us have tended to overlook this one.³

"When, in 1877, I was engaged in the French translation of Zeller's *History of Greek Philosophy*, I attempted to show that man was left out of account in that profound and learned study, one of the most original manifestations of human genius; that the theories of Socrates, Plato, or Aristotle were gradually stripped of all they contained which was personal and living, and were reduced to abstract formulæ, subordinate to an immanent and necessary dialectic."⁴

M. Boutroux is certainly not alone in his impression, although it has taken most of us much longer to make the discovery. What he calls the "classic tradition" takes man into account because its roots go deep into the tradition of social experience. The contrast between the German point of view and the point of view represented by Montaigne, Voltaire, Goethe, Mazzini, and Mill deserves a better statement than it is, for some time, at least, likely to get. Moreover, we can not refute a coherent philosophy with haphazard indignation; we can not refute in that way even a sentimental philosophy like the present-day pacificism. If the German enterprise is the expression of a point of view, and if we intend to resist that enterprise, our own undertaking must have its philosophy no less articulate and consistent. Its formulation will not be an easy matter, but no intellectual adventure is, just now, more important and more truly philosophical. Every contribution should be noted and understood. That is one reason for calling attention, thus tardily, to Boutroux's little book.

No one disputes the industry of the Germans in accumulating data, but we do often hear it said that this industry lacks discrimination. The ideal of perfect objectivity which the Germans claim as their own requires that the point of view be yielded automatically by the completed collection of data, and discrimination between what is relevant and what is irrelevant involves reference to an idea that is antecedent to this collection. Without the antecedent idea the collection must be the mere heap for the making of which the Germans are so often said to show a particular genius. As Boutroux puts it, "the critical point in German science is the transition from the fact to the idea" (p. 5). He has, of course, especially in mind, the sciences of human affairs, and as we now see, this transition, which is the interpretation of the fact, is governed by the German

³ For an excellent account of the philosophy of Pan-Germanism, see *Collection de documents sur le pangermanisme*, publiés sous la direction de M. Charles Andler, Paris, Louis Conard, 1915. 4 vols.

⁴ Boutroux, *Philosophy and War*, p. 2.

point of view, than which, it seems to us, nothing could be more subjective.

When Germany first sent her men into Belgium, one of the things that we were told was going to fight for her was the categorical imperative. It is, of course, an old story that this is a principle of pure subjectivity. Boutroux reminds us that "In Germany more particularly we are continually hearing in ordinary conversation the formula, '*Ich bin fest ueberzeugt*'" (p. 10); and also, "Now the notion of duty as a purely formal categorical imperative—i. e., void of all content and matter—is singularly dangerous of application. In real life one can not be satisfied with a purely formal act of willing: something must necessarily be willed, some matter must be fitted into this empty mold. The categorical imperative, however, remains dumb when questioned as to what it commands. Consequently we are led to seek, not in the world of will, but in the other, the visible world, the only one we are able to cognize, for the matter indispensable to the attainment of a real act. The two worlds, however, the physical and the moral, are by hypothesis wholly heterogeneous and unconcerned with each other. Hence we arrive at the following conclusion: any act, provided it is performed under the idea of duty, may assume a moral character. No morality or immorality could be attributed to an act considered in its visible aspect; only the form of will in which we clothe it makes it morally praiseworthy or blamable." In ethics, "the sole object of certitude is the form of the action to the exclusion of its matter" (p. 19).

In contrast to conviction, the "matter" is the region of truth, the data for intellect, and the irreconcilability of will and intellect is an old theme of Kantian dialectic. The effort may be and has been made to reduce each to the other. Fichte is, of course, the philosopher in whose hands the will became the supreme principle. "Works are nothing; faith is everything. A maxim is good and true if it is accepted with a sense of conviction, if the will recognizes in it its own tendency. All the rules of the true, the good, and the beautiful which classic reason has attempted to set up are ineffectual. These rules, in the philosophy of interiority, are but the substitution of the letter for the spirit, of inertia for liberty, of death for life. The original creation alone, drawing its principle from the absolute will, is beautiful and productive. All works that are original and not imitative, however strange, are true and worthy to be set up for the admiration of men; but every work to the production of which the observance of some rule has contributed is, for that very reason, shallow and lifeless" (pp. 32-33). On the other hand, to reduce will to intellect, to indulge in the illusion

that one is "scientific" without compromise has been to enthrone the dialectic of physical science over the subject-matter of human nature; to say that the physical world is all spirit has resulted in saying that spirit was all physical.

The trouble results, Boutroux thinks, in the neglect of what he calls sentiment and which functions in a reconciling and somewhat Kantian fashion. Upon this cardinal point, however, the author is far from clear. It is certainly a surprise to the present writer to read, "Now, the philosophy which tries to discover in feeling the principle of certitude and truth has been called radical empiricism" (p. 39). This mention of James's idea may, however, throw some light on what Boutroux means by sentiment, the term which the introductory remarks were intended to elucidate.

No one can fail to see how, as Boutroux uses it, sentiment is functionally analogous to the subject-matter of Kant's third critique, and that critique was called for because, to quote again, "The German soul was still divided . . . between two separate worlds—the world of phenomena, as Kant calls it, a shapeless inert mass, and the world of noumena, a transcendent domain of the spiritual and the ideal" (p. 57). What matter was to spirit, the invading hosts of Napoleon were to the Germans whom Fichte sought to inspire with the fictions of *Deutschheit* and *Ursprache*. It is worth noting, however, that these patriotic fictions were instruments with which to assist in repelling invasion by a foreign foe. Their spirit could be symbolized as well by Verdun in 1916 as by Leipzig in 1813. Thus, although the philosophy that expressed the united effort against Napoleon has been so inverted as to become the instrument of just such an enterprise as it was originally directed against, that philosophy was at its birth a noble thing and our admiration of its temper should not be lost in the feelings evoked by the modern misuse of it. That complete inversion of a noble philosophy by which a summons to repel the invader has been transformed into an argument for invading the rest of the world is an achievement in sophistry that can hardly be matched.

Those to whom German idealism has not been merely an affair of epistemology, nor yet a device in Christian apologetics, have usually esteemed it for its social and political point of view. Here the philosophy of the Greek city state was recovered and the suppression of the individual by Hegel seemed justified by the great wisdom of Plato. But Germany should have bewared the Greeks, *dona ferentes*. That philosophy of the city state signified the hopelessness of all federal programmes. It is a philosophy anti-federal in spirit, what we call to-day anti-international. Plato says clearly that his state can have no individuals because it must stand alone.

To quote again from Boutroux, "Spirit to Hegel, is not only an invisible, supernatural power; it has created for itself a world within this world of ours, and attains to supreme realization in a certain force, both material and spiritual, which is none other than what is called the state. The state is the highest of all realities; above it in the world of existence there is nothing. Its function is to organize liberty—i. e., to abolish individual wills and transform them into one common will, which, through its mass and unity of direction, will be capable of making itself inevitable. The State, supreme intermediary between the World and God, spirit being transmuted into force, is the divine instrument for the realization of the ideal" (p. 60). Again, "And, lastly, the *chef d'œuvre* of German culture, that which really, according to the Kaiser's definition, makes it a *Kultur*, and not simply an external polish, such as is found in the Latins, is the moral constitution of man, the total abolition of the idea of right, and its substitution by the sane, virile, and religious idea of duty" (p. 69).

Those loyal students of the ideal who have found so much light in Hegel never understood the antagonisms implicit in this German revamping of a Greek conception. As Professor Munroe Smith puts it,⁵ speaking of more recent theorists: "German thinkers did not ignore the fact that in human society conscious cooperation had introduced a new factor, but they restricted its operation to the single group, and they refused to recognize that civilization had developed any group worthy of consideration except the national state. Among national states the law of survival through struggle maintained unmitigated sway.

"Germany's refusal to recognize the world, even the civilized world, as a society in which cooperation had to any degree displaced or could advantageously displace survival through struggle, found expression in legal theory. The dogma of the unlimited and irresponsible sovereignty of the state was accentuated. This dogma was no product of German or of modern thought. It had come down from the Roman Empire, which included the whole civilized world. The development and coexistence of a number of great civilized states has obviously destroyed the original basis of the dogma; as Professor Lammasch, of Graz, has recently argued, modern states are necessarily members of a society of nations, and no single state can claim, much less exercise, irresponsible power; but in Germany, and also in other parts of the world, absolute sovereignty is still attributed to the several states. It is of course a corollary of this dogma that international rules and customs bind the single state

⁵ *Political Science Quarterly*, Vol. XXXII., pp. 459-479.

only in so far as it accepts them, and only so long as its peculiar interests do not require their abandonment."

This matter of the relation of the individual to the state bears upon the observation frequently made, that what to the German is manifestly objective is no less manifestly subjective to everybody else. To the German, society, in the important sense, exists only in Germany. The German, since he receives his whole social identification from his own state, adds nothing of his own when he interprets a fact in the light of German nationalistic dogmas. He is perfectly normal in that he is like the others of his group, but entirely abnormal by the tests recognized by citizens of other lands.

If the most interesting product of German idealism is a social and political ethics based upon Greek philosophy, the most curious product is the philosophy of history. The two things which the Germans have learned from history are, as Boutroux very succinctly puts it, first, "that history is not only the sequence of events in the life of humanity: it is also the judgment of God on the struggles and rivalry of nations. If some one people seems appointed by history to dominate the rest, this people is God's lieutenant or viceroy on earth, God himself, visible and tangible to his creatures. The second lesson the Germans have learned is that the existence of a people appointed to represent God is no myth, but that such a people does actually exist in the German people itself" (pp. 93-94). The matter, the non-ego beyond the frontier, must cease to mock at God's will and at history guided by His hand. Not merely in Heaven, but on earth, too, must His will be done. Is not doing the will of God the highest morality? That depends, of course, on various things; it depends on what God wills and on the nature of morality.

Now I have no idea of defining the nature of morality. I shall simply assume that Aristotle was right when he said that a man not a member of a polis was either a god or a beast, and that the writing of ethics in collectivistic, social terms is a great advance over the writing of it in terms of individual autonomy and individual conscience. Whatever else morality may involve, it involves fundamentally what Aristotle had in mind, whatever is incidental to partaking in the life of a well-organized cooperative group. Civilization is a cooperative enterprise, and it is by virtue of cooperative relations that the thing morality is possible. The point of this is that, bearing in mind the above quotation from Professor Munroe Smith, whatever the individual German may be at home, the German state has the status of either the god or the beast; it has nothing that can be called morality. On the other hand, the German conception is this: "The state is an eminently moral being; it is the

loftiest realization of freedom and justice. Consequently, whereas the individual, as regards the state, has only duties and no rights, the state, when dealing with individuals, has only rights and no duties. Its duty is to realize its essence, which is force, and so to become as strong as possible" (p. 188). And Aristotle's theory of slavery based on the distinction between Greeks and barbarians recurs in the German classification of peoples into the uncivilized, the half civilized, and the civilized (*die Vollkulturmenschen*). "To these latter, by virtue of their intrinsic superiority, belongs authority, the right to rule other men with a view to increasing their degree of culture and their participation in the work of the world" (p. 193). Add to this the exaltation of the universal in German philosophical tradition, and the idea that spirit exists only by virtue of a reorganization of matter, and it is quite clear that, logically at least, the frontiers of the German state must be the frontiers of existence.

A point of view that is dialectically developed is easy to state, much more so than an attitude that is hardly conscious because it has grown up naturally and spontaneously. France as a geographical expression is easily defined, and so is the programme of any particular enterprise; but Michel, in Donnay's play, found the *patrie* very hard to define: "Mais oui, la patrie, c'est tout ça—et bien, d'autres choses encore;" and Boutroux, "The individual's being is inseparable from sentiment, which is the very basis of his consciousness. Similarly a nation is, above all, a group of men united by the desire to live together, by a sense of solidarity, by community of joys and sorrows, by memories, aspirations and destinies" (pp. 209-210).

Thus it is natural enough that the French idea of nationality should seem inferior in philosophical precision to the German one, inferior, i. e., as an instrument with which one can operate dialectically. That is partly because the German idea has been fashioned as a dialectical instrument, and because the formulation of the "classical" tradition as an idea is what we have now to set about.

Whether M. Boutroux's Alsatian informant was altogether right in saying that the German language had no equivalent for *générosité* and the French language none for *Schadenfreude*, we need not decide. We do know, however, that the Germans idealize their hate. It is part of that robust loyalty which the categorical imperative prescribes. On this point there is an excellent article in the *Hibbert Journal* for April, 1917,⁶ from which I select three or four lines: "It is of interest to the student of national psychology to note that in 1836, only a few years after Goethe's utterance, Edgar

⁶ "National Hate," A. D. McLaren.

Quinet, who knew his Germany so intimately, and whose admiration of some aspects of the Teutonic mind was so profound, spoke of German hate as something peculiar in the category of national antipathies . . . a corrosive hate, he said [six years later] lay beneath an ardent desire for power and for wider recognition of Germany's greatness, and kept the whole nation in a state of fever." The utterance of Goethe alluded to is as follows. Goethe had been saying to Eckermann that national hate is a special kind of hate, and he continued: "It always displays the greatest strength and energy in the lowest stages of civilization. But there is a stage at which it vanishes altogether."

In the Victor Hugo Museum in Paris is a sheet of paper on which Hugo has written an exhortation to the Germans to come to Paris, Paris the heart of the world's intellectual life, the pole to which every free imagination ought naturally to turn. The Germans came a few years later, but not in the spirit in which Hugo had so ardently invited them. And some twenty years earlier Auguste Comte gave the following title to one of his works: "*Discours sur l'ensemble du positivisme, ou exposition sommaire de la doctrine philosophique et sociale propre à la grande république occidentale composée des cinq populations avancées, française, italienne, germanique, britannique, et espagnole, toujours solidaire depuis Charlemagne.*"

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THE PRAGMATIC METHOD

DEWEY'S essay on "The Need for a Recovery in Philosophy," which occupies the place of honor in *Creative Intelligence*, has aroused a great deal of comment and criticism. The essay presents the issues between pragmatism and non-pragmatic systems of philosophy in outline form, and with a minimum of detail. It affords, consequently, an excellent opportunity for the comparison of philosophic standpoints. The narrowing down of issues to fundamental propositions is frequently advisable in philosophy, and I wish to take advantage of this opportunity to make a few observations on the differences between pragmatism and idealism. The possibilities of such an inquiry are endless, and I must limit myself to the merest sketch of the ideas I have to present.

Although Dewey limits the object of his essay to "an attempt to forward the emancipation of philosophy from too intimate and ex-

⁷ Quoted from McLaren's article, p. 407.

elusive an attachment to traditional problems,"¹ it is obvious that he considers the issues raised in this connection to be vital from the standpoint of pragmatism. It will be advisable, before proceeding with the discussion, to summarize the fundamental argument of the essay. Hazardous though such an undertaking may be, a criticism that is to be honest and effective can take no other course. For the sake of convenience in reference, I have numbered the various steps of the argument as outlined. It should be observed that this outline does not pretend to be exhaustive, nor to follow the order of the essay. (1) Dewey contends for a thoroughgoing empiricism which shall base itself upon experience to the exclusion of all noumenal or transcendent factors. (2) He finds that the empiricisms and rationalisms of the past have fallen into error through failure to adhere to this standpoint. They have introduced non-experienced elements into their interpretation of the world. As a consequence, their formulations of the problems of philosophy have been incorrect, and their results out of touch with the practical problems of life. (3) This lack of empiricism has manifested itself most clearly in the problem of the relation of man to his world. The subject has been interpreted as a knower, who stands apart from experience and has no place *in* it. Such a knower is a non-experienced entity, illegitimately introduced into the situation. A true empiricism would treat the subject as a fact of experience, and describe it in terms of its experienced content and relations. Through the introduction of the transcendent knower into philosophical speculation, the older systems of philosophy became side-tracked on the epistemological problem of the relation of the knower to the known. This problem, with all its attendant problems, vanishes when the extra-experiential subject is dismissed. (4) In his attempt to give a truly experiential description of the relation of the subject to reality, Dewey calls biology to his aid. Taking man as an active being, placed in an environment partly favorable, partly unfavorable, knowing appears as a special form of activity having the function of enabling man to make the most of the circumstances amid which he is placed. Knowledge is thereby given a wholly empirical and naturalistic interpretation, and the agent no longer appears as a mysterious being operating upon experience from without. (5) As the result of this interpretation of man and mind the older problems of philosophy vanish, attention centers upon the practical issues of life, and philosophy is brought into touch with the actual problems of conduct. Thus a needed reform in philosophy is achieved.

Each step of this argument calls for comment, but I must confine

¹ *Creative Intelligence*, p. 5.

myself to the issues that seem most crucial. The demand for a thoroughgoing empiricism is not peculiar to pragmatism, and may therefore pass without criticism at this time. The second and third steps of the argument present a criticism of the philosophical systems of the past and of the present in so far as they cling to the traditional problems of philosophy. As I read between the lines, Dewey means to draw a sharp distinction between pragmatism and all other systems of philosophy on the basis of their attitude toward the epistemological problem. A general distinction of this kind can not be pushed too hard, and I have no desire to challenge its appropriateness, especially since it appears to me to be well grounded in the main. I am certain, however, that critical idealism forms one exception to the rule, and since Dewey has a conviction to the contrary, the point would appear to be worth some debate.

Let a few observations suffice. In a large part of his discussion, of course, Dewey is following in the footsteps of idealism. This is especially true of his criticism of British empiricism. Again, the fact that modern idealism has attained its present position through a criticism of the systems of the past is an item not to be overlooked in estimating its attitude toward traditional problems. Dewey does appear to recognize, however, that modern idealism calls for special treatment, and the criticism which he directs against it is usually of the kind presented in the following passage from *Creative Intelligence*.² "More positively instructing are the objective idealisms which have been the offspring of the marriage between the 'reason' of historic rationalism and the alleged immediate psychical stuff of historic empiricism. These idealisms have recognized the genuineness of connections and the impotency of 'feeling.' They have then identified connections with logical or rational connections, and thus treated 'the real World' as a synthesis of sentient consciousness by means of a rational self-consciousness introducing objectivity: stability and universality of reference." The type of idealism represented here is not modern. That it still survives in some quarters I am aware, but in a historical survey one would be compelled to treat it as a transitional standpoint, which has long since been discarded by the majority of idealists.

Kant's philosophy might aptly be spoken of as an "offspring of the marriage between the reason of historic rationalism, and the alleged immediate psychical stuff of historic empiricism." Beginning with a manifold of sensations, taken over from empiricism, he was compelled to add thought to the manifold in order to account for the unity and order of actual experience. "A sensory manifold being all which is really empirical in experience, a reason which

² Pp. 26 f.

transcends experience must provide synthesis."³ But the experience so produced remains a compound of terms and relations, too angular and structural to be a representation of the experience which man actually possesses. Kant's "constitutive" view of reason influenced his followers for some time after his noumenal world had been abandoned, and idealism had grounded itself once and for all upon experience.

In general, however, the "constitutive" view of reason belongs to the psychological phase of Kant's philosophy. It is associated with his "Copernican revolution." Modern idealism has found Kant's chief virtue, not in his psychology, but in the logical development whereby he steps from a mechanical to an organic mode of interpreting reality. The tendency has been more and more toward the standpoint of philosophy as a "criticism of categories." "Idealism," says Professor Sabine, "has been in its intention first and always a metaphysics; whatever it stood for in ethics and logic was always understood to be preliminary to the establishment of metaphysical principles, or derivative from the consistent development of a certain metaphysical position."⁴ This is no doubt generally true as a statement of fact. It appears to me, however, that the logical method of idealism, the careful scrutiny of means and methods which invariably precedes its metaphysical undertakings, may be regarded as more characteristic of the school than any special type of metaphysics that has been produced.

The logical approach to philosophy has certain implications which have, I believe, been overlooked by its critics. The standpoint is instrumental. It recognizes that our categories are continually changing, never final. The process of criticism inevitably makes manifest the human and empirical character of the forms of reflective thought. It shows that each mode of interpretation has an application to a particular subject-matter, and that any attempt to interpret reality at large in terms of a few limited categories must result in failure. It may be that our knowledge constitutes some kind of a whole, or system. It is possible that the basis of such a system of knowledge might be found in a type of relationship that underlies the more obvious forms. But that is conjecture. For the present we are restricted to logical methods which are divergent in form and application. It sometimes happens that a particular logical system is "ejected" into reality, or hypostatized. The error is not peculiar to idealism, but where it is committed by an idealist there would appear to be some basis for Dewey's charge that reality

³ *Op. cit.*, p. 18.

⁴ "Philosophical and Scientific Specialization," *Philosophical Review*, Vol. XXVI. (January), 1917, p. 19.

is looked upon as a rational system constituted by objective thought. (A careful distinction must be made between unconscious hypostatization and the deliberate "trying-on" of logical forms.) Setting aside incidental exceptions, it seems clear to me that the natural development of idealism is away from the "constitutive" view, toward a method of criticism and "ideal experiment" which is thoroughly empirical.

A logical instrumentalism of the type described carries no metaphysical implications of its own. A critical idealist can forego metaphysical inquiry with as much grace as a pragmatist. He need not suppose that reality has an eternally fixed nature. The Absolute and the Whole do not occupy a necessary place in his vocabulary. The standpoint does demand, however, that the metaphysician shall be cautious and deliberate in the choice of the concepts whereby he interprets the world. Let him scrutinize the instruments which have been provided, consider their fitness for the task in hand, and use each in its proper place and connections. Such a logical inquiry has no specific connection with the problem of the possibility of knowledge. It does not rest upon any particular interpretation of the relation of the knower to the known. It depends only on the simple observation that our methods of knowledge are limited in scope, but capable of development. Through criticism the capabilities of each method may be tested and new methods brought to light.

The attitude of idealism toward the epistemological problem is partly governed by this method. Granting that the relation of the subject to reality must be concretely defined, it does not follow that it can be defined biologically to any better advantage than it can chemically or physically. All these methods may contribute something, but none is exhaustive. Human nature does not lend itself to easy definition. There are facts about the mental life that baffle analysis. These can not be left out of reckoning. The chief business of philosophy appears to be the explanation of such facts as refuse to submit to established modes of interpretation. But this would necessitate the projection and "trying-on" of new categories and logical forms. Idealism does not, therefore, give a biological explanation of intelligence, even though it insists upon a concrete interpretation of the subject-object relationship. "It knows no egocentric predicament," says Creighton, "because it recognizes no ego 'alone with its states,' standing apart from the order of nature and from a society of other minds. It thus dismisses as unmeaning those problems which are sometimes called 'epistemological,' as to how the mind as such can know reality as such."⁵

⁵ "Two Types of Idealism," *Philosophical Review*, Vol. XXVI., (September) 1917, p. 522.

In passing on to a consideration of the fourth part of the argument outline above I hope to draw more clearly the distinction, which has already begun to appear, between the pragmatic and the critical methods. In this connection Dewey's entire preoccupation with the problem of the relation of the subject to its experience should prove significant. A false formulation of this problem (the epistemological formulation) is held responsible for the artificialities of traditional philosophy. Because of this fact a tremendous reform may be achieved by substituting an empirical account of this relationship for the older non-empirical formulation. The empirical restatement of the problem must proceed by way of biology.

Organism-in-relation-to-environment is the key which, for Dewey, unlocks all the doors of philosophy. To this typical situation he refers all the problems of intelligence and conduct. From it he derives all his illustrations and formulas. Ask a pragmatist to solve a problem and he refers you to the organism-environment situation with the same promptness that a Christian Scientist displays in reaching for his *Key to the Scriptures*. The pragmatic method appears to consist in restating all problems in terms of the organism-environment situation, a procedure which involves no other logic than that employed in translation. It seems to be not so much a method as a recipe, or set of directions.

To repeat again, the difficulty is that pragmatism adopts the methods of biology with too little criticism. Has empiricism no recourse save to the methods of biology? Has philosophy become so bankrupt that it must borrow its categories from science? Says Dewey: "A belief in organic evolution which does not extend unreservedly to the way in which the subject of experience is thought of, and which does not strive to bring the entire theory of experience and knowing into line with biological and social facts, is hardly more than Pickwickian."⁶ It appears that one might have a firm belief in the efficiency of organic evolution in the field of biology without conceding it a similar potency in the field of mind and morals. There is a sense in which knowing may legitimately be regarded as "extra-natural." It may, that is, be of such a character that it can not be explained by any method which reflective thought has so far developed. As it escapes, by reason of its fullness and variety, from the mechanical and sensationalistic modes of interpretation, so it may be too complex for comprehension under the biological and organic conceptions. From this standpoint, the attempt to make biology the be-all and end-all in the explanation of mind is as premature as it is audacious.

I would not urge the point so strongly were it not for my con-

⁶ *Op. cit.*, p. 35.

viction that this mode of philosophizing is non-empirical and stultifying in its effects. It is what I have got into the habit of calling a "nothing-but" type of philosophy. It reduces the great variety and complexity of our mental activity to a single type. Knowing is nothing but an indirect mode of activity; the moral is nothing but the expedient in the way of our conduct; theory is only projected action. Any system that explains by reducing, that "nothing-buts" or epiphenomenalizes the facts of experience is, to my way of thinking, walking backwards. A true empiricism will leave each fact of experience as it finds it, undiminished in content and richness of possibility. Pragmatism, to put the matter briefly, attempts to explain the whole by the part; experience by one of its typical situations. "Knowing," Dewey assures us, "must be described by discovering what particular mode—qualitatively unique—of doing and suffering it is."⁷ An appeal to experience—that appeal which so delights the "immediate empiricist"—will show that knowing is very seldom experienced as a form of doing and suffering. Nor is it experienced as a form of activity, direct or indirect. In the situation of tension, adjustment, and response, a very special situation, it is, of course, true that I am seeking a mode of activity for dealing with a practical problem. But only a small part of our knowing is of this type. I repeat, that to reduce all knowing to the one form is non-empirical and false to experience.

A criticism of this kind should be accompanied by illustrations and references to specific situations, but I must confine myself at this time to a general statement of my objections to the method of pragmatism. It may be summed up in the statement that pragmatism can not do full justice to the mental and spiritual life of man because of the limitations of its biological mode of interpretation. It is not so much wrong as it is inadequate. Dewey expressed himself on this matter several years ago as follows: "Certainly unction seems to have descended upon epistemology, in apostolic succession, from classic idealism; so that neo-Kantianism is rarely without a tone of edification, as if feeling itself the patron of man's spiritual interests in contrast to the supposed crudeness and insensitiveness of naturalism and empiricism."⁸ I hope that my attitude will not be attributed to mere sanctimoniousness. After all our science there remains a mass of phenomena still to be explained. These are not physical in nature, nor are they biological. No progress can be made by attempting to force them into molds which are not adapted to receive them. The mental life of man is too complex, too fine and subtle, to be comprehensible in biological

⁷ *Op. cit.*, p. 37.

⁸ *Influence of Darwin on Philosophy*, 1910, p. 201.

terms. From the standpoint of a true empiricism, which renders every fact its due, the attempt to explain intelligence as an instrument of adaptation appears hopeless. If there is something skeptical in this attitude, it is at least open-eyed.

But it is not truly skeptical, for it has a positive basis. It is founded on the belief that progress can be made toward the development of new forms of thought. From this standpoint philosophy has no more important business than the discovery of new modes of interpretation which shall be adequate for the explanation of those phenomena which baffle routine methods. But progress in this direction will never be achieved by limiting philosophical thought to the employment of the biological modes of reflection.

If I have spoken of the method of idealism as a "criticism of categories," I have not intended to imply that its attention is devoted to a search for the "pure" forms of thought. Thought is always concrete. Out of relation to things thought is like a hand that has been severed from the body. This is to say that thought and reality must be studied together. The methods of physics would be wholly unintelligible apart from their application, and can only be studied in operation. Nevertheless, they lend themselves to examination and criticism. Methods may be discussed as methods. This empirical form of criticism is, according to my understanding, the essence of the critical method in philosophy. Pragmatism, by stopping short at biology, ceases to be truly empirical and experimental.

There must be an element of adventure, of pure speculation, in philosophical inquiry. Intelligence must be free to play upon the world without restriction. Fancy and intuition are not without results when the purpose is sincere. Let us then by all means have metaphysics, which is nothing more than an attempt to get beyond the obvious, and attain a new understanding of the world in which we live. In speaking of the development of modern idealism, Bosanquet says: "All difficulties about the general possibility—the possibility in principle—of apprehending reality in knowledge and perception were flung aside as antiquated lumber. What was undertaken was the direct adventure of knowing; of shaping a view of the universe which should include and express reality in its completeness. The test and criterion were not any speculative assumption of any kind whatever. They were the direct work of the function of knowledge in exhibiting what could and what could not maintain itself when all the facts were confronted and set in the order they themselves demanded. The method of inquiry was ideal experiment."⁹ I can not see, for my part, how such speculation is to be

⁹ "Realism and Metaphysics," *Philosophical Review*, Vol. XXVI., (January) 1917, p. 8.

avoided if there is to be any development in the sphere of reflective thought. Dewey assures us that philosophy is vision, imagination, reflection. But within the limits of the same page he asserts: "Philosophy recovers itself when it ceases to be a device for dealing with the problems of philosophers and becomes a method, cultivated by philosophers, for dealing with the problems of men."¹⁰ There has never been an honest philosophy which was not an attempt to cope with "the problems of men" (I presume that philosophers are men). But there are problems and problems. Who can say which is most important? Who can dictate the direction which philosophical inquiry is to take? It is best to let reason follow its own paths, without let or hindrance. In that programme lies the hope of man, unless history has recently turned pragmatist.

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CEREMONIAL IMPATIENCE

ENGAGED in studying what I have called the element of reluctance, of holding back, in ceremonialism,¹ that unwillingness to meet the changes of life until they become inevitable which leads to crisis ceremonials, one becomes aware of a complementary feeling, also a formalized feeling, a kind of impatience to meet the change and, as we say, get it over. It is this impulse or tendency as it expresses itself in crisis or epochal ceremonial that we may call ceremonial impatience.² In the Greek word for rite, *têlêtê*, and perhaps in the Hopi word *passiohti* this attitude is summarized. *Têlêtê* means rite of growing up, becoming complete. The term was applied primarily to the initiation ceremony of puberty and then to weddings and funerals.³ *Passiohti* sometimes means "ended," "completed," and sometimes it appears to mean "to hold a ceremony."⁴

¹⁰ *Op. cit.*, p. 65.

¹ E. C. Parsons, "Holding Back in Crisis Ceremonialism," *American Anthropologist*, January-March, 1916.

² In literature Joseph Conrad has well described it as the desire for finality which expresses itself through literary "solution by rewards and punishments, by crowned love, by fortune, by a broken leg, or a sudden death," the desire for finality "for which our hearts yearn with a longing greater than the longing for the loaves and fishes of this earth." And Conrad adds, "Perhaps the only true desire of mankind . . . is to be set at rest." (*The North American Review*, April, 1916.)

³ Jane Ellen Harrison, *Ancient Art and Ritual*, p. 112. New York and London, 1913.

⁴ H. R. Voth, *The Oraibi Powamu Ceremony*. *Field Columbian Mus. Pub.* 61, Anthropol. Ser. III., No. 2, p. 133, n. 4.

To begin with conception rites. That there is much variation in popular knowledge about conception we have learned in recent years. Among primitive peoples it is not always accounted an achievement that may be left safely to nature. It is one of the functions of magic to induce it—sometimes to preclude it. The resort to fertility rites at weddings may be taken as one form of such impatience, so to speak, with nature. Fertility rites after nature has been given a chance, rites to overcome barrenness, are perhaps less striking instances of impatience. These rites are widespread. Charms against barrenness or supernatural facilities for reproduction are almost always an important property of the medicine-man or at the command of benevolent spirits. It is usually only when these resources are tried in vain that barrenness is accepted with all its oftentimes tragic consequences, personal neglect, divorce,⁵ or social degradation. The childless woman or man is one of the anomalies all but modern society cherishes so deep an aversion for that it is perhaps no wonder fertility rites or charms are resorted to, resorted to through sheer apprehensiveness, I am aware, as well as through impatience.

For pregnancy or birth rites or charms there would seem to be less urgency. And yet these maternity rites or charms are very common. Many motives of course are back of them—desire for offspring of one sex or the other, desire to establish the paternity of the expected child, desire to bring definite benefits or good luck to child or mother, desire to safeguard them and society at large from bad spirits or supernatural evil.⁶ But sometimes there are specific rites to hasten the birth—when the pregnancy drags out or labor is prolonged. Even when the impulse is less concrete, one surmises that maternity rites in general are prompted to some extent at least by the desire “to do something,” a desire implying some degree of impatience.

Growth rites and rites to hasten adolescence are widespread. Luiseño Indian women are told to roast themselves at the fire after childbirth that their offspring may grow up quickly.⁷ The Hupas, another California tribe, give “medicine” to the newborn child to

⁵ Divorce for barrenness may be prompted, I suggest, not only by utilitarian consideration, but by the discomfiture of waiting for the pregnancy that does not occur. A husband comes “to the end of his patience.” The divorce is his emotional outlet for the sterility as well as a device against childlessness.

⁶ The idea of evil pregnancy or birth spirits is an expression of the discomfiture the circumstances produce, of the distress caused by change, perhaps of the tension of *waiting*. Imputation of disaster to the presence of pregnant women is another expression of this feeling.

⁷ P. S. Sparkman, “The Culture of the Luiseño Indians,” p. 225. *Univ. of California Pub. in Amer. Archeol. and Ethmol.*, VIII. (1908-10).

make it grow up fast.⁸ In old Mexico it is recorded that during a new year ceremonial parents would pull and stretch the limbs of their children to make them grow and also lift them "several times from the ground, holding them by the sides of their heads, above their ears."⁹ At the end of a folk tale or myth¹⁰ I have seen Zuñi children stretch their arms above their head, exclaiming "May I grow *so* big." During a girl's initiation ceremony the Hopi women say ritualistically, "We cause you to grow up."¹¹

Have we not also our formulas or quasi formulas of growth or achievement? We look forward, we say, to the time when John or Mary will be in school or in college, when they will be in business or have a career, when they will be married or have children of their own. In a non-ceremonial culture "looking forward" may be the only expression suffered the impatient, a meager expression of sentimentality in place of the full satisfaction of a rite.

In non-modern or ceremonial cultures adolescent or puberty rites are often confounded or identified with marriage rites. The belief that a girl must be married before her first menstruation or immediately subsequent to it, may be viewed, I think, as an expression of impatience over any delay in the prescribed order. Take, for example, the Kaffir belief that a girl who has not mated at nubility will die, or the early Hindu declaration that "reprehensible is the father who gives not his daughter in marriage at the proper time." "In consequence of his preventing the legitimate result of the appearance of her menses," a man was to lose his dominion over his daughter. After waiting three years she might choose her own bridegroom, and of him no nuptial fee was to be required.¹²

Hostility against old maids is, like hostility against barren matrons, an expression of aversion to the anomalous, but into it too enters a large measure of impatience,¹³ of being fretted because the expected does not happen. Even in modern society it is only the confirmed old maid or old bachelor—and I think the popular use of this adjective very significant—only the *confirmed* celibate who no

⁸ P. E. Goddard, "Life and Culture of the Hupa," p. 51. *Univ. of California Pub. in Amer. Archaeology and Ethnology*, I. (1903-04).

⁹ Zelia Nuttall, "Ancient Mexican Superstitions," *J. Amer. Folk-Lore*, X. (1897), 275.

¹⁰ In Zuñi myths as in the myths of other Indians supernaturally rapid growth is of frequent occurrence and in this feature at least one surmises in the myth an element of wish fulfilment.

¹¹ H. R. Voth, "The Oráibi Oáqöl Ceremony." *Field Columbian Mus. Pub.* 84, Anthropol. Ser. VI., No. 1, p. 11, 1903.

¹² *Laws of Manu*, IX., 4, 90, 93.

¹³ E. C. Parsons, "The Aversion to Anomalies," this JOURNAL, Vol. XII., pp. 213-14.

longer disappoints his or her friends' expectations, and so is not badgered by those impatient persons, the match-makers.

To be impatient about the unmarried, to expedite marriage, is, as we know, the business of professional match-makers among some peoples. To the existence of this profession child-marriage may be in part attributed. But only in part, for into child-marriage or betrothal enter several factors—the assurance of virginity in the bride, the preclusion of any expression of desire on the part of the young people, the assurance of a desired alliance between two groups, satisfactory economic arrangements. The latter motives are not peculiar, of course, to child-marriage, but they are capable of arousing impatience to get themselves realized. But besides the impatience for concrete advantages there is a less well-defined impatience to be discerned in the custom of betrothing the very young, or, for that matter, the unborn, impatience towards life itself. Among us, parents sometimes pretend that their children are going to marry each other “when they get big.” “She’s your little sweetheart, isn’t she?,” we ask a child, or, “What’s become of your beau?,” and we are but half oblivious of the absurdity of the question. Brought to visit in the house of his father’s clan, a Tewa boy baby is loudly welcomed as “the husband,” *i. e.*, of one of the girls of the clan, and a Tewa woman speaks of her son’s sons in jest as “our bridgrooms.”¹⁴ For the American, whether Anglo-Saxon or Pueblo Indian, such references are jocose, for the circumstances under which they might have been gravely made are altered. Nevertheless, the references express a would-be satisfaction, so to speak, the satisfaction of having a child’s matrimonial future assured, of having it all settled beforehand. The systematic restriction of marriage choice so characteristic of Australian and Melanesian society and occurring in pronounced forms now and again in very many groups, this delimitation is largely acceptable because it leaves little to chance, to the unexpected, it leaves nothing to be *waited for*.

Marriage ceremonial itself does not afford as conspicuous examples of impatience as of reluctance. And yet the ceremonial as a whole may be looked at as an expression of impatience, impatience with the natural steps of courting, and the prescriptions that at a set time during the celebration intercourse shall take place may fairly be described as a sign of impatience. Then and there relationship must be settled. In divorce this attitude is still more striking—then and there the relationship must be broken; no incertitude, no temporizing, no compromise. Let the tie be snapped and snapped once for all, this is everywhere, I presume, the spirit of divorce.

¹⁴ Barbara Freire-Marecco, “Tewa Kinship Terms from the Pueblo of Hano, Arizona,” *American Anthropologist*, p. 286, April-June, 1914.

It is an impatience against the adjustments that would in time be made by life itself.

The approach of death seems at times to provoke impatience which takes ceremonial or customary expression. Hocart tells of a death he witnessed in the South Seas. The man had died once already that morning, his people thought, but he had come to life again and kept them all waiting till he should be ready for his funeral. And so they hung over him certain leaves to drive away the spirits holding him back from death. "The leaves apparently took effect; he breathed his last; the women raised the usual wail; . . ." ¹⁵ In many communities the death wail is started before death, or, as among the Ovaherero, the moribund is covered from sight. ¹⁶ The removal of the moribund from the dwelling—removal to a temporary death house or to sacred spots or just out of doors—is, I take it, a rite of impatience, however it may be explained as a wish to preclude the death infection or preserve otherwise death-tainted property, or, as on the part of the Hindu, to avoid unrighteousness and scandal. ¹⁷

Similarly the reasons alleged for killing the aged or aging or the decrepit may be merely superficial reasons. That they are killed because they are a practical encumbrance or because it is a mercy to them, a duty towards them, or because, dying comparatively unimpaired, they will be better off in the spirit world, all these reasons are just the utilitarian, rationalistic arguments likely to be imputed to savage society or, for that matter, the arguments savages might make themselves ¹⁸—rationalizing is not confined to the civilized. And yet it is the feeling that makes us say, in a lingering illness, "it was a relief when death came" or "it was good to have it over with," ¹⁹ it is this feeling, I surmise, that makes the more simple-

¹⁵ *Folk-Lore*, XXVI. (1915), 132.

¹⁶ *Folk-Lore Journal* (South Africa), I. (1879), 51.

¹⁷ Bose, Shib Chunder, *The Hindoos as They Are*, p. 257 ft. Calcutta, 1883. A Hindu who dies at home is a branded man. As for the aged person who returns home after immersion in sacred river or tank, he, and still more she, is utterly disgraced. Bose knew an old widow who was brought home after fifteen immersions. Finally overpowered by a sense of shame, she drowned herself. "Shall I ever die!" is a common exclamation of an aged widow (*ib.*, p. 259).

¹⁸ Cf. E. Westermarek, *The Origin and Development of the Moral Ideas*, I., 386-93, London, 1908.

¹⁹ Recently on Andros Island in the Bahamas the attitude of an old Negro acquaintance at the deathbed of his wife was described to me by a witness. "Good Lo', take her out of her misery," he had prayed. "Good Lo,, hurry her up."

minded hasten the "relief."²⁰ The extreme weakness of the sick or aged, their very different habits, are disturbing, extremely upsetting, and the belief that their ways are soon to become still more different is also disconcerting. The pain of a disintegrating sense of participation with them prompts the desire of breaking up the association with them as quickly as possible, *i. e.*, killing them.

Exorcism of the dead is explicitly a rite of impatience. In the words of a Diegueño Indian "make him done with this world"²¹ is the obvious meaning of exorcism. Formal and explicit exorcism is a widely recorded custom; but less set signs of impatience towards the dead have also been noted. For example, when the Chukchee death "followers" put the clothes on the body, a work of no little difficulty, at every hitch "the followers" might admonish the deceased, saying, "Leave off! Make haste! You have to go away. Do not be so obstinate."²² At one Chukchee funeral Bororgas describes, when the deceased was as usual consulted about the funeral place, but delayed answering, the widower exclaimed: "Be reasonable! Let us have an end! You hamper the ceremony."²³

The throat of the Chukchee corpse is cut—to let the soul fly away with such impetus as to make it difficult for it to return, and the corpse is left exposed to beasts of prey. The second day after the funeral the mourners visit the spot to be reassured by the destruction of the corpse.²⁴ The Chukchees rely upon the beasts of prey for the final consummation, but there are many other well-known practises to hasten putrefaction or desiccation, and they may lend themselves, I suggest, to an analogous interpretation. They probably express impatience to be thoroughly rid of the dead, the belief attaching that until the flesh disappears from the bones the ghost lingers about his home.

²⁰ Or the mercy of putting an end to the lingerer as we still say in connection with animals, or as the Romans said no doubt of the aged or infirm slaves they left to die on an island of the Tiber.

²¹ T. T. Waterman, "The Religious Practises of the Diegueño Indians," p. 311. *Univ. of California Pub. in Amer. Archaeology and Ethnology*, VIII. Berkeley (1908-1910).

²² W. Bogoras, "The Chukchee," p. 522. *Mem. Amer. Mus. Nat. Hist.*, VII. Leiden and New York, 1907.

²³ *Ib.*, p. 525. At the funeral the reindeer drawing the sledge of the corpse are slaughtered and then the funeral director, sitting astride the corpse, jerks the reins violently and urges the dead reindeer with his whip, pretending he is going fast to the country of the dead. The bystanders encourage him, exclaiming, "Hurry up! Go faster!" (p. 526).

²⁴ *Ib.*, ft. 528, 530. Delay in its destruction means that the deceased is waiting for a companion—a typical illustration of the rationalizing characteristic of any profound discomfiture, in this case the discomfiture of failing to get rid of the dead, the finished one.

In the foregoing cursory analysis most of our illustrations are drawn from the so-called primitive cultures. One of the striking differences between primitive and modern culture is the passing out of the latter of crisis ceremonialism. Nowadays, to increasing groups, pregnancy, birth, growth, marriage, and death rites appear merely ritualistic or sentimental survivals. But the general habit of mind, the original feelings without which ceremonial survivals, in this case as in others, would be far scarcer, this original attitude persists. Upon these conservative feelings and mental habits the war has thrown a flashlight, so to speak, bringing out obscure or overlooked cultural or psychological traits into strangely sharp outlines. Many of these outlines have taken the shape of popular shibboleths, an equivalent, as it were, for ancient ritual. The foremost shibboleth of ceremonial impatience has been "war to end war." Again and again we hear this mystical interpretation of the present war delivered from the pulpits of government, of business, and of churches which have come to the support of government and business. Even when the abstraction of war to end war is not urged, the nature of the present war is felt to be critical. "This is no ordinary war which the world is waging," declares Mr. Root²⁵ and many others. The declaration not only gives the dignity of a high purpose to the enterprise of war, it implies a sense of crisis, to use Mr. Root's own term, of climax, a feeling which leads directly to the familiar dictate, "We must settle this once for all."²⁶ To the more mystical, settlement means the abolition of war, to the less mystical, to the "bitter enders," the partisans of "*la victoire intégrale*," abolition of the power of Germany. But to all alike, to all the would-be givers of the knock-out blow, whether to Germany or to war in the abstract, may be imputed that desire for finality which in favoring circumstances is expressed in culture in rites of impatience.

Before the war, rites of impatience together with other rites found, in the complexity and diversity of our culture, hostile circumstances. The war, however, makes for unity, as we say, and centralization of thought and interest. Hence a renaissance of ritualism may be expected.

Indeed, already a litany, if not a complete ritual, of impatience has been formulated. This litany was published on October 26, 1917, where current creeds are often published—in the advertising columns of a daily newspaper.²⁷ Under the caption "Until We End this War" we read:

²⁵ In an address reported in the *New York Tribune*, September 15, 1917.

²⁶ From an address by Lloyd George reported in the *New York Tribune*, October 23, 1917.

²⁷ *The New York Times*.

Not one ship can sail a safe sea—

Until we end this war.

No one can know what his money will buy—

Until we end this war.

No man's son may live the life that has been lovingly planned for him—

Until we end this war.

The ill effects of war touch each home in our country; they affect every man and woman and child within the boundaries of the United States. The conditions under which our lives, and our children's lives are lived, will not again be sweet and clean, constructive and helpful—

Until we end this war.

The awful need for our aid will increase—

Until we end this war.

The publication of this litany was paid for by the Cotton Goods Trade for a Liberty Loan Committee in behalf of the Second Liberty Loan. Already the technique of these war bond issues is elaborate; as it develops it may present a veritable ritual of impatience. Expressive paraphernalia is the giant thermometer on the village green, of the town clock with hands indicating the local and national bond sales.

ELSIE CLEWS PARSONS.

NEW YORK CITY.

REVIEWS AND ABSTRACTS OF LITERATURE

Lecciones de Antropología. JULIÁN RESTREPO HERNÁNDEZ. Bogotá: Arboleda y Valencia. 1917. Pp. xxii + 227.

This is the third volume of a series of text-books on scholastic philosophy, published by the University of El Rosario, in Bogotá. The first volume of the series, entitled *Lecciones de Lógica*, was published by Dr. Restrepo Hernández in 1907. The second volume, entitled *Lecciones de Metafísica*, was written by the president of the university, Dr. Rafael María Carrasquilla, and appeared in 1914.

The neo-scholastic literature of the nineteenth century has been roughly divided into two schools. The older school, also called Roman, sticks to St. Thomas's method of argumentation and ignores or condemns modern thought. The most genuine representative of this school is the Jesuit, Cornoldi, who describes modern philosophy as "the pathology of human reason."

The other school is more modern in its thought and its method. Following the spirit rather than the letter of St. Thomas, it studies modern writers and follows modern methods of reasoning. This school is known as the Louvain school, because its best-known repre-

sentatives are Mercier, De Wulf, and the other professors of the Louvain University.

The Colombian university of El Rosario belongs to this latter school. It has not been, however, directly inspired by the teaching at Louvain. The text-books published by Mercier and his colleagues have not, to my knowledge, been used in Colombia, and the professors of El Rosario have taken their stand on philosophical problems independently of external influences. Dr. Restrepo was the first neo-scholastic on the American continent who, discarding obsolete methods, studied the medieval problems with a modern mind.

This philosophical spirit, already present in the *Lógica*, inspires every page of the *Antropología*. The scholastics of the old school never spoke of anthropology. They described their science as psychology; and, while they dwelt on the proofs of the immortality of the human soul, they left the human body altogether in the background. Dr. Restrepo, on the other hand, does not only study the *ψυχή*, he studies the *ἄνθρωπος* as a whole; and the pages which he devotes to the nature and function of the brain, and to the origin of sensation are the most interesting part of his work.

Dr. Restrepo's theory of sensation is especially interesting. Modern physiologists, at least in this country, consider the brain as the sole organ where sensation is verified. The function of the end-organ is, according to them, to receive the impulses, and the function of the nervous fibers to transmit these impulses to the cerebral cortex. Dr. Restrepo repeatedly opposes this view, and maintains that sensation takes place in the end-organ. In so doing, he believes not only that he agrees with that common sense which teaches us that we see with our eyes; he also believes that his theory alone explains our organic unity.

I here declare myself incompetent to decide between the two theories. Dr. Restrepo adduces fairly cogent arguments in favor of his view, which he corroborates with the authority of the famous Spanish physiologist, Ramon y Cajal.

In so far as the origin of man is concerned, Dr. Restrepo resolutely opposes the Darwinian theory and the descent of man from the lower animals. It is well known that, all over the world, Catholics have been inclined to oppose the theory of evolution as contrary to the Holy Writ and to the Catholic faith. There are, however, a few notable exceptions. Among English-speaking thinkers, St. George Mivart, for instance, maintains that God may have formed the body of Adam out of the organism of some highly developed animal. The question is simply whether the text: "*Formavit Dominus Deus hominem de limo terræ*" must necessarily be interpreted in a literal sense, or whether it can be explained as "*de*

limo jam viventi, jam animato." Among the French, the Dominican Father Leroy advocated the same view in his book *L'évolution des espèces organiques*" and secured the approbation of the work by Père Monsabré as not being in conflict with faith. The question of the agreement of the theory of evolution with the Biblical teaching is, of course, a question for the theologian, not for the philosopher. It is as a philosopher and as a scientist, not as a theologian, that Dr. Restrepo rejects the Darwinian theory, and the arguments he adduces are derived from the natural sciences, and especially from paleontology.

The Darwinian theory has been greatly modified since Darwin; and nobody, I believe, would defend it nowadays in its original form. The pragmatic school in philosophy has led us to regard hypotheses as temporary formulas whose function is to group facts together and to explain them by their mutual relations. And many are now inclined to regard the parentage between the species as an ideal—not a material—parentage. Still, as pointed out by Bergson, the actual data of embryology subsist. The correspondence between compared embryology and compared anatomy also subsists. And, as the actual data of paleontology can not be denied, we must admit that the different forms between which an ideal parentage seems to exist have appeared successively on our globe. According to Bergson, the partisans of the theory of evolution do not demand anything else. We dare suggest that Dr. Restrepo would have no objection to an evolution thus understood.

The book is worthy of the study of all who are interested in modern thought. The neo-scholastic will find in it the most lucid exposition of the principles of St. Thomas's philosophy. The physiologist will see the fundamental principles and the actual facts of his science discussed by a true philosopher who believes that every scientific fact has its significance in the logical explanation of the universe.

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JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. September, 1917. *L'évolution dans ses rapports avec l'éthique* (pp. 201-227): A. LYNCH.—The biologist who refuses to study the special conditions in which ethics evolves can not claim the right to speak thereof with authority. No biologist has so far indicated with the necessary precision the connections of his science with the problems of ethics. No serious biol-

ogist accords the sanction of his philosophy to the facts of brute force, and such theories as that of Bernhardt spring from a source other than a scientific study of nature. *Les attitudes mentales et la mémoire* (pp. 228-264, concluding article): A. LECLÈRE.—The writer asserts as the most important theoretical conclusion of his paper that "if a considerable part of the normal and abnormal activity of the mind has its immediate explication in the normal and abnormal psychology of memory, it is the psychology of consciousness which ought in the last analysis explain that of memory." The chief practical conclusion is that "our reasoning is above all a function of our actual mental attitude which furnishes it with an abundance . . . of memories suitable for justifying the conclusions that we wish to be true." *Notes et Documents. La Psycho-analyse et une nouvelle critique de formes supérieures de l'idéalité*: J. PÉRÈS. *Analyses et Comptes rendus. J. Durand, Remarques sur la nature contractuelle du mariage*: GEORGES DAVY. *Charles de Rouvre, L'Amoureuse histoire d'Auguste Comte et de Clotilde de Vaux*: L. DUGAS. G. A. Coe, *The Psychology of Religion*: E. RENOIR. John Ruskin, *Les sept lampes de l'architecture. La couronne d'olivier sauvage*: M. SOLOVINE.

JOURNAL OF EXPERIMENTAL PSYCHOLOGY, October, 1917. *A Repetition of Ebert and Meumann's Practise Experiment on Memory* (pp. 315-346): H. B. REED.—The mind, in learning a quantity of material, must proceed by steps just as the body does in covering a quantity of space. Facts contradict the whole method of learning, and show part method more in agreement with psychological laws. If so, the economy of learning as regards method is how to avoid conflicting associations. *The Influence of Color on Apparent Weight, A Preliminary Study* (pp. 347-370): J. E. DECAMP.—The problem was to determine if there is a color weight illusion and a material weight illusion. The conclusions are only tentative, but show that the influence of the color of an object upon its apparent weight is relatively slight and there is no simple correlation between the affective quality of a color and its influence upon apparent weight. *Tactual Illusions of Movement* (pp. 371-385): HAROLD E. BURTT.—The most salient of the factors noted by Korte in the similar visual illusion were investigated. Among other conclusions it was found that two punctate tactual stimuli on the forearm for equal lengths of time separated by a discrete time interval and a few centimeters apart, yield under certain conditions of time, distance, and intensity an impression of movement from one point to the other in the direction of the actual temporal succession. *Association-Reaction as a Test of Learning* (pp. 386-391): KNIGHT

DUNLAP. — A test of learning by some form of the association reaction was made.

Bennion, Milton. *Citizenship—an Introduction to Social Ethics*. With an Introduction by David Snedden, professor of educational sociology in Teachers College, Columbia University. Yonkers-on-Hudson, New York: World Book Company. 1917. Pp. xviii + 181. \$1.00.

Gordon, Kate. *Educational Psychology*. New York: Henry Holt and Company. 1917. Pp. 295.

Herbert, S. *An Introduction to the Physiology and Psychology of Sex*. London: A. and C. Black, Ltd. Pp. xii + 136. 3s. 6d.

Hobhouse, Mrs. Henry. "I Appeal unto Caesar." *The Case of the Conscientious Objector*. With Introduction by Professor Gilbert Murray and notes by the Earl of Selborne, Lord Parmoor, Lord Hugh Cecil, and Lord Henry Betnik. London: George Allen and Unwin, Ltd. 1917. Pp. xxii + 84. 12s.

NOTES AND NEWS.

At the invitation of Western University, London, Ontario, Professor William P. Montague, of Columbia University, gave recently a course of three lectures on "The Futurists in Philosophy." The lectures dealt in turn with the thought of Nietzsche, James, and Bergson. By special invitation of the Woman's Canadian Club, Professor Montague gave a supplementary lecture on "The Political Outlook in America."

DR. ROBERTS B. OWEN, instructor in philosophy at Columbia University, has gone into the division of psychological tests for the government.

DR. HENRY MAUDSLEY, the distinguished British alienist and psychologist, has died at the age of eighty-three years.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

WHY DO PHILOSOPHICAL PROBLEMS PERSIST?

IT is scarcely a decade since the controversy over the official doctrines of objective idealism was at its height. The chief point at issue was the question of philosophic method, or, as it was usually stated, the nature of truth. For objective idealism the chief reliance for the discovery of truth was, and still remains, the dialectic method; whereas the pragmatic attack was based upon the proposition that truth, in the language of James, must have a "cash value" in terms of concrete experience. While the debate undoubtedly did much to clarify the issue, it naturally did not result in a decisive victory for either party, but finally died away from sheer exhaustion. A decent respect for the feelings of one's fellow men would perhaps suggest that the subject of the dispute be left to rest in peace. The recent appearance, however, in a new edition, of Miss Calkins's well-known text-book, *The Persistent Problems of Philosophy*, is a strong temptation to raise once more the previous issue, for the reason that the book is an unusually able and skilful embodiment of the method against which the pragmatic movement is a reaction and a protest.

Even to the casual eye Miss Calkins's book presents an appearance of finality and logical symmetry which the "toughminded" reader has learned to recognize and distrust. The point of departure is the doubt of Descartes with its implication that there exists a self as the possessor of the doubt. Given the fact of selfhood, the argument then proceeds to develop the implications of this fact, through contact with historical systems, until the reader finally lays his burdens down in the shelter of an absolute that guarantees to his fundamental values immunity from the vicissitudes of time and change. In this triumphant progress divergent doctrines acquire the status of partial expressions or "moments" in idealistic truth, and the conclusion emerges that "with Hegel's system all logically possible ground-forms of metaphysical doctrine have been put forward, so that a

¹ *The Persistent Problems of Philosophy*. Mary Whiton Calkins. New York: The Macmillan Company.

system, however spontaneous its inception, must fall within the grooves already worn" (p. 397).

The logical skill with which this result is obtained may be cordially conceded. For the critic the important question is naturally just how it was done. It is contended, in effect, that the self is the only fact that is known or can be known, and the threat of solipsism is obviated by the identification of the self with an inclusive self, which makes it possible to recognize the existence of further reality without going beyond the limits of selfhood. The existence of other selves, therefore, offers no insuperable difficulty. "There is a certain sense in which the other self is ultimately *not* another. For if all finite selves are expressions of the infinite self, then in one way each is what the other is, so that direct knowledge of one by the other is conceivable" (p. 146). But what justification is furnished for the contention that "the immediateness of self-consciousness is the starting-point of all philosophy, the guarantee of all truth" (p. 409)?

In the case of Descartes the grounds for this conclusion are familiar. Having failed to divest himself of the traditional doctrine regarding a substantial soul, Descartes naturally accepted the fact of error and the relativity of sense-perception as conclusive evidence that the soul and its experiences are existentially cut off from all other reality, which, therefore, could be reached only by processes of ratiocination. The existence of the self, accordingly, is the only fact that is directly accessible, and so it follows that "the immediateness of self-consciousness is the starting-point of philosophy." This conclusion is adopted by Miss Calkins as a foundation-stone for an idealistic superstructure. It appears presently that, since immediate knowledge is limited to the self, all reality must be construed in terms of selfhood. As the argument progresses, however, it seems finally to abolish its own premises. "In being conscious of myself, I am directly conscious of myself as limited; and to be conscious of myself as limited is to be conscious of that which limits me, as being, in a certain sense, beyond myself" (p. 410). Direct consciousness, we now find, never was limited to the self and its "states," since our knowledge of objects is equally direct. This result would undoubtedly prove disastrous to the starting-point, if it had not already been shown that only self is real. The beyond is a beyond only "in a certain sense"; in a deeper sense it is identical with the self that is limited by it. It follows, therefore, that "in being directly conscious of other-than-myself I am conscious of other self or selves. Thus my consciousness of friend, of master, or of God, is in its nature a direct consciousness" (p. 410). That is, Descartes's naïve assumptions are first exploited to the limit, and then, when the end is attained, they

are ungratefully repudiated as errors of uncritical thinking. *Undank ist der Welt Lohn*. This form of procedure is on a par with that of certain subjectivists, who argue that, as Santayana puts it, because all our sense-experiences are conditioned by the body, therefore we have no body. Or, to quote a more illustrious precedent, the procedure is analogous to that of Kant, who adopted Hume's conception of sense-experience as a conglomeration of independent sense-units, in order to justify his own doctrine that knowledge involves categories having *a priori* validity, the categories being then used to deny and set aside the notion of isolated sense-units as an egregious fiction.

It is possible, no doubt, to object that the belief in the self, according to Miss Calkins, does not depend upon Descartes's argument at all, but rests upon "direct introspection," which reveals the fact "that consciousness is not a mere idea or series of ideas, but that it is the unique subject of ideas" (p. 407). This objection, however, does not take us very far. That we meet with the fact of selfhood in the course of experience is indubitably true, though it is not altogether clear why this should be called a fact of "introspection." But in view of the admission that our knowledge of things other than self is equally direct, it would seem that the knowledge of objects is on essentially the same footing as our knowledge of self, even though the term introspection appears less appropriate as a label in the former case. It is true that the objects thus directly known may prove in the end not to be anything other than the self, after all. This, however, is a matter to be determined by further investigation. It is not proved by first assuming that the knowledge of the self has a superior directness or immediacy and then arguing that objects must be fundamentally or ultimately identical with the self on the ground that our knowledge of them has precisely the same kind of immediacy. Or, to put the matter differently, to assert that we have direct knowledge of things which are other than self and then to identify the self with everything in the universe in order to make this assertion square with Descartes's erroneous supposition that direct knowledge is limited to the self and its "states," is bound to suggest a certain inconclusiveness, even when the contention is backed up by an appeal to introspection. My point just now is not primarily that the system advocated by Miss Calkins is untrue, but simply that it is constructed out of whole cloth. It is neither a cogent development of Descartes's doctrines nor is it in any way supported by the facts of introspection. The treatment of Descartes and his successors is essentially in the nature of unintentional *camouflage* for the concealment of a major operation, the objective of which has been selected in advance. To cite our previous illustration, it might be granted as

an antecedent possibility that Kant's doctrine of *a priori* knowledge may prove to be true, but this antecedent possibility stands on its own bottom and gains no support whatever from the manipulation of a bystander, whose business it is to observe and know, but who is not permitted to take a hand in what is going on. The presence of the isolated sense-data borrowed from Hume.

Approaching the matter from a different angle, we may say that the problem of knowledge with which Miss Calkins deals is essentially an artificial problem. Here again Descartes furnishes us our clue. When Descartes transformed the self into a "thinking thing" existentially detached from objects, the problem of knowledge became the problem how an idea "in the mind" could know an external reality from which it was separated by an impassable gulf. What is of especial importance in this connection is just this peculiar turn given to the problem of knowledge or consciousness. The latter is lifted bodily from the stream of events and reduced to the status of spectator must make no difference whatever to the object. It is true that Descartes's undertaking was a complete failure as regards knowledge of external objects. The isolation of consciousness proved to be so complete that not even a "cognitive relation" with objects could be established. With regard to the self, however, which happily dwells on the hither side of the chasm, the case is presumed to be different. Here, as Miss Calkins agrees, knowing is an indubitable fact, for the deliverance of introspection is reasonably clear. Here we meet with no obstacle to an immediate awareness of the self, for "subject and object coalesce in the experience of my consciousness of myself as knowing and thinking, feeling and willing" (p. 359). But in this immediate awareness it is not difficult to trace the influence of the original dualism. Knowledge of the self is supposed to be possible, not because reference in this case is unimpeded by the ugly ditch of dualism, but because reference has been eliminated altogether, since "subject and object coalesce." In this immediate awareness we seem to achieve the dualistic ideal of knowledge, which is the detached onlooking of the bystander. It is evident, however, that this ideal loses its authority when dualism is discarded. It is hardly justifiable to abandon dualism and still assume without argument that all knowledge must be at bottom of this kind, incompatible appearances to the contrary notwithstanding. Yet the whole idealistic elaboration of selfhood, in Miss Calkins's philosophy, may be traced back to the fact that the dualistic notion of consciousness is retained after the reasons for it have been rejected. The purpose of her undertaking is to draw out the implications to which we are committed if we take for granted that all knowledge is of this sort,

but whether we ought to take this for granted is not considered at all. The dialectical development, accordingly, is just an interesting exhibition of what can be done by a determined person with a given set of concepts. A procedure which assumes beforehand that reference *must* be reducible to immediacy and which has recourse to an absolute mind in order to prove that knowledge is "essentially the immediate presence of spirit to spirit" (p. 147) can hardly claim to be empirical, either in starting-point or in method, and is consequently unable to give any reasonable assurance that the subject-matter of the discussion has anything to do with actual existence. And this lack of assurance is all the more painful when we discover that the reference to the absolute is more of an appeal to faith than to the understanding. How the infinite produces ideas in the finite mind, or how the finite knows either the infinite or other human selves is a problem, so we are told, for which "a completely satisfactory solution, it must be admitted, philosophy has never yet found" (p. 273).

Whether a satisfactory solution of this problem is inherently possible is a matter of minor importance for present purposes, although it may safely be added that this possibility is much open to doubt. As Professor Bush says, "A problem generated by mythical conditions may contain a perfectly logical sequence, but it is just as mythical as the conditions that generate it. The important thing to find out in the case of any suspected problem is what raises the question."² As I have tried to show, the problem of knowledge which Miss Calkins tries to solve has its origin in the dualistic assumptions underlying the speculations of Descartes. The problem itself is artificial, and what is needed is not a solution of the problem, but a reconsideration of the meaning of the Cartesian doubt. If we approach the subject without idealistic preconceptions as to what knowledge or consciousness must be like, the doubt seems to resolve itself into the doubt whether a given fact *A* may be taken as a sign of some further fact *B*, *i. e.*, it concerns itself with the relation of "leading" or "pointing" by the present fact to some future fact. The doubt means that the pointing is uncertain, that the fact pointed to is for the time being merely a suggested object, which, as suggested, stands in a certain contrast with the present fact. It is this contrast which, as I venture to think, gives us the key to the distinction between self and object. Moreover, the resolution of such a doubt plainly calls for the type of inquiry that is characteristic of science and common sense, rather than purely deductive inference; and the tests appropriate to such inquiry would seem to be of a pragmatic kind. How-

² "The Emancipation of Intelligence," this JOURNAL, Vol. VIII, p. 176.

ever, my immediate concern is not so much to argue for the correctness of this interpretation as to insist that the attempt to solve problems without reference to the conditions in which they arise makes philosophy a repository for "persistent problems" that ought to be recognized as dead and entitled to decent burial. Such attempts lead inevitably to a confusion of an "unearthly ballet of bloodless categories" with an inquiry into matters of existence.

That Descartes's doubt, taken as a reaction against the claims of authority, was of enormous significance, is not, of course, in dispute. A similar significance attaches to Locke's insistence that direct experience must be the touchstone of theory, and to the idealistic formulation of the doctrine that man is the measure of things. These doctrines were significant precisely because they provided an outlook upon life that gave promise of a more effective control of experience. It is when theory lapses from its proper function of giving us a better leverage on the facts of experience and becomes a means of perpetuating artificial problems that we have a close parallel to the procedure of the hidebound lawyer whose vision is limited to the letter of the law. It is this conservatism which has converted Locke's doctrine of "simple ideas," so useful and so true within its own proper limits, into a millstone on the neck of psychology even to the present day, and which has placed the doctrine of the self, as a purely dialectical development, outside the pale of scientific method and reduced it to the level of mental acrobatics. Instead of evaluating theory in terms of specific service, we rebuild our world with the aid of unverifiable and unintelligible fact, in token of our subservience to the theory. In psychology the quest of knowledge has degenerated into a still-hunt for mythical sensations, and in philosophy it has lost itself in a half-mystical adoration of a reality which promises to relieve us from further responsibility for the tangled web of "appearances." The usefulness of theory in a workaday world is superseded by the idle ceremonial of the temple. "As modern life becomes freer and more diversified, these conservative symbols become less and less adequate to the substance of experience. What can be more naïve than to substitute the dialectic of a symbol for the direct study of conditions, if what one is after is a knowledge of actual conditions? It is certainly to be regretted if professional philosophy has assumed a character that renders it unavailable as a method of intelligence. That does not mean that guiding philosophy has ceased to exist, but only that it has changed its name and fled into other departments of our universities, where chairs are not maintained for either saving the supernatural or threshing the husks of idealism."³

³ Bush, *ibid.*, p. 177.

The reproach that philosophy is "abstract," that it dreams pipe-dreams and spins cobwebs in a world where there is so much real work to be done, is too well founded to be passed over lightly. When we "substitute the dialectic of a symbol for the direct study of conditions" philosophy inevitably tends to become the sort of thing that its opponents say it is. We need to reconsider the purpose that an introduction to philosophy is to accomplish, to return once more to a direct study of conditions. Why is it that men philosophize? To say that speculation has its origin in curiosity or wonder is not to say very much. Scientific investigation may, with equal justification, be ascribed to wonder, and it is not apparent why all legitimate inquiry should not be confined to the domains of the several sciences. It is true that the results of scientific inquiry seem to show internal discrepancies when we attempt to correlate what has been achieved in different fields, and also that they sometimes fail to tally very well with what is accepted as fact in the affairs of every-day life. The sensations and images into which psychology resolves experience seem to leave no room for physics; the identification by the physicist of matter with the "primary qualities" makes knowing an inscrutable mystery; and the tendency in physiology to regard consciousness as a product or concomitant of cerebral processes conflicts with the reality of freedom and personal responsibility. Yet the recognition of such discrepancies is not equivalent to a recognition of the claim of philosophy to an honorable place in the curriculum. Since the discrepancies are evidence that there is error somewhere in what has been taken as fact, it may be argued that the remedy must be furnished by the scientist himself. He alone is competent to pass upon the evidence within his chosen field, and the attempts of philosophy to sit in judgment on the results of scientific inquiry must be set aside as unwarranted impertinence.

This contention undoubtedly has a certain plausibility, but it appears less cogent when we discover the reason why the results of science and the observations of common sense fail to unite spontaneously into a harmonious body or system of fact. The scientist is not only an expert in a certain subject, but he is also a human being, and as such he brings to his work a highly complex background of traditional beliefs and assumptions. As the heir of all the ages he is in possession of a culture that has its roots in the animisms, the theologies, and the common-sense hypostatizations of bygone generations. In so far as this background is affected by his researches it is subject to modification; but for the rest it is likely to remain in general about what it was. The traditional doctrine, for example, of the soul or of mental states is not necessarily a serious obstacle to the physicist or the physiologist within the limits of their respective

sciences, and even the psychologist is able to get along, after a fashion, on this basis. In a parallel way the common-sense notion that weight is a property or attribute which inheres in each object by itself is entirely compatible with the making of accurate observations regarding the use of levers or the behavior of objects such as ships, avalanches, and falling timbers. It is when the observations are extended to include non-terrestrial objects that this concept of weight is found to be inadequate. When the need of a revision arises it is not primarily the facts attested by observation and experiment, but the uncriticized assumptions that constitute the source of the trouble. If physics or physiology is found to conflict with the facts of knowledge or of ethics, the difficulty has its origin in notions regarding the nature of intelligence, and a difficulty of this sort does not call for more refined methods in our physics and physiology, but demands a correction of these notions with reference to the matter in hand. The problem is not a problem in physics or in physiology, nor are the methods of these sciences appropriate to the solution of the problem. What is needed is, in the first instance, an emancipation from the weight of tradition, habit, and authority, and to secure this emancipation is the proper function of philosophy. The reason why men philosophize is that the escape from this tyranny of the past can be obtained in no other way.

How completely our habitual reactions and interpretations may fail to meet the needs of new situations is sufficiently evident from the current confusions regarding democracy, free speech, patriotism, loyalty, duty, and the like. If it is uncertainties of this sort that reveal to us the insufficiencies of our intellectual heritage, do they not at the same time furnish us with a measure for the proposed reconstruction? The value or truth of a philosophic system is not to be estimated by reference to a standard of "absolute reason," but by the success with which it enables us to meet emergencies as they arise. The pretension of finality is an indication that philosophy has misunderstood its mission to liberate intelligence from the domination of naïve assumption through a criticism of knowledge and to provide something to live by in the form of a generalized theory of adjustment. The "persistent problems of philosophy" center on the nature of intelligence, truth, and goodness because these need to be redefined from generation to generation. An introduction to philosophy that is true to its obligations will take as its point of departure the actual difficulties of the present and will attempt to show both the origin of the difficulties and a means of reconciliation. If we let go of the present situation as our point of orientation or standard of reference, there is no substitute save the criterion of formal consistency. Instead of correcting erroneous

assumptions in the light of the present situation, we then convert them into fundamental truths and build around them a new heaven and a new earth to justify our act. The gratuitous premises inevitably lead to a non-empirical and unverifiable conclusion, the chief merit of which is not that it furnishes a more unified and suggestive outlook upon new situations as they occur, but rather that it has been derived by a strictly logical process of inference.

When a system of philosophy loses contact with life and becomes absorbed in a set of purely professional problems there is ground for the suspicion that it no longer serves the needs which called it into being. To keep an eye on the social situation in which the problem has its origin, to bear in mind that it is the function of philosophy to reorganize the conflicting interests of life, is indispensable if philosophy is to protect itself against the danger of losing itself in problems that are the product of historic accident. The need of reconstruction from which philosophy is born is precisely the need to escape from the obsessions of the past and thus to liberate intelligence for the tasks of the present. Philosophic reflection means an unlimbering of our intellectual resources, an emancipation from the effects of mental habits and predispositions, in so far as these constitute obstructions to a more effective mode of dealing with present times and circumstances; and the "persistent problems of philosophy," accordingly, demand a solution, not in terms of "absolute reason," but rather in terms of the successive situations which give to each solution whatever value it may possess as a contribution to human progress.

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SOCIETIES

THE SEVENTEENTH ANNUAL MEETING OF THE AMERICAN PHILOSOPHICAL ASSOCIATION

THE PHILOSOPHERS IN WARTIME

PHILOSOPHERS, as somewhat amorphously defined by the popular imagination, are profound irrelevant people totally and absurdly unaffected by considerations of time and space. Philosophers have themselves contributed to this untutored estimate by persuading themselves that their interests were timeless and their conclusions eternal. Even the disciplined professional, therefore, might have anticipated that the first war meeting of the American

Philosophical Association would betray no concern with contemporary difficulties, but would concentrate its energies upon the changeless problems of the one and the many, and of change itself. Theoretically, the mere fact of there being current under the forms of time and space a war that was occupying the attention and the energies of the whole world should have made no difference at the Christmas meeting of the Association; it should have been marked by an infinite unconcern and by the peace that, contemporary events to the contrary, goeth with understanding.

Unfortunately for the popular estimate, the Philosophical Association last Christmas held, in more senses than one, a War Meeting. Apart from the internal dialectic that was waged over the problem of the Annual Definitive Discussion on a set topic, the outstanding contemporary character of the meeting was its concern with Ethics and International Relations, discussed in detail by Professor Fite in the columns of this JOURNAL. The time, energy and enthusiasm that were lavished upon this section of the programme were eloquently conclusive testimony to the relevancy of philosophy, and the essential human responsibility of which philosophers are acutely conscious in times of stress. Professor Tufts did indeed attempt to generalize the problem and state its changeless structure and essential conditions, but his full and richly illustrated presentation of the central ethical problems involved, was obviously controlled by its contemporary reference. The problem of sovereignty is certainly not a casual puzzle of the moment, yet its peculiar stress at the meeting, as presented by Professor Hocking, was a concern with the "vital circuits," the human relations that the state was able to facilitate and secure. Professor Overstreet's splendid prospectus of progress in human relationships was, above all, a war document; it was frankly and intensely concerned with the "points of stress" which brought about this war, and with reorganizing the world so that those stresses might be eliminated. It was a vision built out of the challenge of contemporary difficulties and a generalization from the obtruding particulars of our very present evils. The subject-matter of Professor Lovejoy's time-shortened paper was again an evidence of the interests of contemporary thinking. It was a discussion made acutely relevant by the events of the last three years: the analogy of state and individual ethics.

The discussion of the second and last day of the meeting was marked by an animated continuance of the ethico-international problem, marked by a many-sided debate as to method and motive in international relations, and brought into the region of the concrete and specific by Mr. Bates with his plea for a detailed consideration

of the facts in such a definite problem as that of the Japanese purpose in world politics. The whole discussion, marked by vision and a vivacious inventiveness as to technique, was given a logical certification by Professor Cohen, who came over from the aloof area of formal logic to urge that the peculiar function of the scientist was not to be a social scientist at all, but a kind of social logician. He must not be an economist—for which profession he was indeed badly equipped,—but a precise and penetrating critic of the economists' glib and unconsidered terminology. The philosopher was not to turn economist, but to make economists philosophically minded.

Following this austere and salutary warning to the wanderers from the philosophic fold, there was an abrupt shift to more traditional interests, with Mr. Smith's assault upon the sacred validities of the syllogism. His challenge was not allowed to pass. Professor Montague rose to demonstrate the unimpeachable quality of the syllogism and his own loyalty to Aristotle. The major premise was surrounded with all the passion and vision that had on the previous afternoon aureoled the future of the state. Nor was the syllogism alone in bearing the brunt of logical offensives. Bertrand Russell's symbolic logic came in for a somewhat damaging analysis at the hands of Mrs. Christine Ladd-Franklin, with whose paper the logical intensity subsided.

The afternoon session of the second day was variously concerned with esthetics, the history of freedom of thought, and the still vigorous and valetudinarian question of mind and body. Professor Woodbridge Riley's paper on "Early Free Thinking Societies in America" stood out as one of the few purely historical contributions of the meeting. Miss Parkhurst's paper on esthetics had a tempting persuasiveness both as to form and intent. Her thesis that esthetic experience could all be comprehended under the category of the evolution of mastery roused the queries of Professors Tufts and Gardiner. There seemed to be a unanimous agreement, however, that Miss Parkhurst's paper was not only an educative analysis of the esthetic experience, but an illustration of it. The afternoon ended, as afternoons will, when philosophers gather, with a discussion of the relations of mind and body, as presented in a paper on Parallelism by Professor Grace De Laguna, and in Professor Sellars's paper on Mind and Body.

The contemporary interest and relevancy of philosophy was given official support in Professor Moore's presidential address, which was an eloquent and substantial plea for a science of values, for a philosophy that should really be a guide to conduct, and have a function in society. As Professor Moore saw it, this was the opportunity

of philosophy, to be creatively interpretative and directive, to be the scientific control of men's possibilities, and an authentic programme of progress. We had been precise and progressive enough about means; that was the business of science; it was a challenge to philosophy, in an era of specifically human difficulties, to become a science of ends.

Philosophical assemblages ought, on the theory of timeless unconcern, to be careless of their environment, and the spirit of wonder should flourish wherever and under whatever material discomforts philosophers gather. But even the devotee of irrelevancy and of freedom from time and space could not but be sensitive to the conditions under which this meeting was held. The beautiful Princeton Graduate College was an ideal two days' retreat for world-weary or world-worried philosophers, and even the austerities of Meinong's Logic acquired values and colorful contours in the spacious café of the Common Room.

Professor Montague on the last afternoon of the session waived the time for the continuation of the Mind-Body Problem from its 1916 analysis. Parallelism and Interaction had been forced out by the time devoted to parliaments of nations and federations of the world. Officially, perhaps, the former problem was the more important; it certainly has a more time-honored genealogy. But then, perhaps, philosophers are not so callously irrelevant as they imagine, and are learning that as they have been unconscious responses to their own age, they may take it upon themselves consciously to direct the future. Certainly if the discussion on International Relations was not calculated to make philosophers kings, the philosophers were vitally concerned with the future of kingdoms.

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ETHICS AND INTERNATIONAL RELATIONS

THE discussion on "Ethics and International Relations" occupied two sessions at the last meeting of the American Philosophical Association, the afternoon session of Thursday (January 27), and the morning session of Friday. I have been asked to report the impressions and opinions of an observer—"from our special correspondent," so to speak. My general impression, aided by opinions heard and overheard, is that the discussion was a distinct success—not, perhaps, in the sense held by our efficiency-philosophers, that it achieved definite scientific results, but in the sense that it turned out to be stimulating; and the general feeling seemed to be

that it ended all too quickly. This I attribute to the fact that even philosophers, accustomed to view the world *sub specie eternitatis*, are more deeply moved by a topic referring to the temporal tragedy of the present time; but also, perhaps, to the fact that the room in which the second session was held was very cosy and comfortable. Even among philosophers it appears that the soul moves more freely when the body is satisfied.

The afternoon session was occupied by the appointed leaders of the discussion, Professors Tufts, Hocking, and Overstreet, to whom was added Professor Lovejoy. I understand that the papers of the first three are to appear in the *International Journal of Ethics*. I shall, therefore, give only the salient points, as I was able to get them. The paper of Professor Tufts, of Chicago, was full of interesting illustration, gathered from a wide range of literature, and left one with a strong impression of the multiplicity of issues involved in the question. His statement of the question was: (1) Are nations to be held morally responsible for their acts? And (2) if they are, how shall we account for the clash of national ideals—in other words, what are the moral issues? After outlining the various attitudes taken towards the first question,¹ he proceeded to answer this question affirmatively. Replying to H. C. Warren's contention that "international conflicts are not so much moral events as they are conflicts of social forces"² he reminded us that conflicts of individuals are also conflicts of forces, yet none the less moral events. Treitschke himself, in holding that the state, as absolute power, is above moral judgment, appeals to an ethical scale of values, as embodied in the laws of nature, and subscribes to the desirability of the heroic life. As for the heroic life, "I can only wonder," said Tufts, "whether those who have actually been close enough to the trenches and the empty homes in such a war as this, will still regard it as the best life. If so, I fear that no arguments from pure reason will have consideration. I can only say, in the words of Lincoln, 'I should think that any one who likes this sort of thing would be very much pleased with it.'" But if conflict is nature's law, it is also man's; and man is intelligent. If we admit that intelligence enters at all into the conflict of impulses—or of "social forces"—then the issues are thus far ethical and it becomes an obligation to supplant conflict by cooperation. (Personally, I assent to the argument from intelligence, but I prefer to base the conclusion upon the discontinuity of man and nature rather than upon the familiar pragmatic doctrine of continuity, for which Tufts seems here to stand; the reader may take his choice.)

¹ See his outline in this JOURNAL, Vol. XIV., p. 720.

² *International Journal of Ethics*, April, 1916.

What, then, in general are the issues? First, there is the (pragmatically familiar) conflict between status and change; for example, between the vested rights, secured by treaty, of one nation to a given territory and the growing needs of another, or the growing capacity, for the use of its raw material. Such issues, Tufts suggested, might readily be settled by the processes of trade were it not for the intrusion of the merely alleged need of national prestige. And this involves, secondly, the conflict of aristocratic and democratic ideals, an issue parallel, it seems, to that of status and change. A militaristic state is likely to represent in its foreign as well as in its domestic relations a *Herrenmoral* which unfits it for entering a democracy of nations. To adjust all of these difficulties, it seems that we need not only an international court, but an international legislature.

Professor Hocking, of Harvard, contributed his part in a spoken address which was admirably balanced and direct.³ In general his purpose was to show that the idea of sovereignty is not only compatible with the idea of moral obligation between states, but positively implied therein; while at the same time the state is not a person. I must confess that I can not understand a moral obligation which is not between persons. Nor could I grasp Mr. Hocking's blackboard demonstration of the state as an entity transcending the individuals composing it. Having fair eyesight, I could see the points supposed to represent the individuals, but the social relations did not appear to be upon the blackboard—does Mr. Hocking mean that a social relation is a spatial relation between points? Nor could I appreciate the validity of the foundations offered for the idea of sovereignty: (1) That the state implies a leader whose decisions shall be final seems to me to be contradicted by the constitution of the United States and the status of its President; I fear that Mr. Hocking's state is based upon a militaristic model. (2) Nor am I quite certain that the state is "psychologically prior," in the sense that it is the interest that makes all other interests possible. The interest in food is also an interest which makes all other interests, including that of the state, possible; yet except for a certain view of life, which I suppose Mr. Hocking not to share, it is not psychologically—certainly not ethically—prior. And to say (3) that each state stands for a unique culture, or a unique experiment in living, seems to me to imply, after all (if, indeed, it be true), that the state is a person. Indeed, I should say that the personality—or the personification—of states was clearly implied in Mr. Hocking's conception of justice as between states; which, according to him, is a matter,

³ His theses may be found in outline in this JOURNAL, Vol. XIV., p. 698.

not of legality, nor yet of equity as defined by the courts, but of such a consideration of individual needs and ideals as we expect to find, for example, in the family.

In common with some others, I felt that the paper of Professor Overstreet, of the College of the City of New York, in answer to the question, "What will be the effect of the war upon our ethical concepts?" though most agreeable as a piece of composition, betrayed an enthusiasm rather too simply Utopian. Yet I should say that his analysis of the evils which have been brought to recognition, as evils, by the war was both accurate and solidly grounded. These were summarized by Mr. Overstreet as "Prussianism" (between states) and "profiteering" (between classes and individuals), the two being only different names for the same thing; which I should call the imperialistic attitude. Both Tufts and Overstreet made it clear, by the way, that the moral issues between states are only an extension of the issues within the state. "Prussianism" manifests itself, then, in economic relations, in the idea of the "sphere of influence"; that is, in the attempts of capitalistic groups to exploit weaker nations. In the cultural world it is represented by the attempt to impose one's national culture upon alien races; as exemplified by the egotism of "the big brother" and "the white man's burden" and by the various ramifications of the idea of "missionary zeal." In political relations it is represented by the idea of sovereignty, an idea now to be replaced by the idea of a rational organization of nations based upon "open door" for all cultures. All of these conceptions of prestige the war has put ethically out of date. If this means that the time is past when we could derive edification from the imperialistic swagger and twaddle of a Rudyard Kipling, I hope that Mr. Overstreet is right.

Professor Lovejoy, of Johns Hopkins, closed the afternoon session by giving a single illustration of "The Limits of the Analogy between Personal and State Ethics"—an illustration sufficiently interesting to make us regret that Mr. Lovejoy had generously given away his allotment of time. The absoluteness of sovereignty, he pointed out, is based by analogy upon the absoluteness of property rights within the state. But this absoluteness is qualified (shall we say? I do not know how else to express Mr. Lovejoy's meaning) by the state's right of eminent domain. There is, however, no state of states, and, therefore, no provision for eminent domain as between states. What is the ethical conclusion? From the speaker's reference to the action of the United States in the case of the Panama Canal (which I did not understand him to condemn) I supposed him to mean that when a state wanted badly a piece of another's

territory, it should simply "take" it—if it could. This caricature of his argument, uttered in the discussion of the next morning, Mr. Lovejoy promptly condemned; explaining that he meant only that you could not argue from the absolute right of private property to the absolute sovereignty of states. At the risk of putting an unfair question to what could be only the fragment of an argument, I venture to ask, Why not? Is it because, in point of fact, the right of property within the state is not absolute but limited (*e. g.*) by eminent domain? This seems to mean that (with Mr. Lovejoy, as I understood him) you may still argue from a qualified property-right to a qualified sovereignty; and if so, it seems that the analogy is, after all, complete.

Mr. Tufts began the morning session of Friday by knocking at Mr. Overstreet's "open door" with the question, how he would reconcile the open door for all cultures with the principle, laid down both by Overstreet and by Hocking, of each his own culture; what if one of the cultures in question happened to be cannibalistic?

Mr. Overstreet replied by explaining that a cannibal culture would be self-contradictory—no culture whatever; an argument which, I think, should be placed in the philosophical museum beside Kant's attempt to prove that self-contradiction is involved in suicide. In any case, why should cannibals not be permitted to eat one another; or, perhaps, in lieu of birth-control, their superfluous children? Mr. Overstreet went on to define the open-door policy as standing for "the principle of opportunity." But he also qualified it (as I should say) by introducing a principle of universal requirements to which all should conform. Later in the discussion he also denied that by "open door" he meant "*laissez faire*." This seemed to me to reveal the point of obscurity in his whole argument, as applied both to international relations and to economic relations within the state. How shall we test the sincerity and reality of a need, whether individual or national, except by the sacrifice, or the effort, that will be made to get it under free competition?

Mr. Bates offered some interesting contributions to the discussion of the open door from an experience of some years in Japan. In particular he pointed out that oriental peoples are becoming keenly alive to the fact that nine hundred million orientals occupy only one fifth as much of the earth's surface as six hundred million of other peoples. But when he rejected the suggestion of birth-control as irrelevant, I could not follow him. Does he mean that unlimited prolificacy is a right peculiarly oriental?

Mr. Bates was followed by the present writer with the suggestion that the attempt to show that international relations are irrelevant

to ethical considerations is based upon a distinction purely academic, academic distinctions being defined as those necessary for the preservation of professorial fences. "Sovereignty" is nothing but the departing shadow of the divine right of kings, surviving to-day as a convenient legal fiction. But the professor of politics finds the doctrine of sovereignty a useful protection against usurpation on the part of the professor of ethics; who in turn protects his chair by teaching the uniqueness of the "ought." In point of fact any relation becomes *ipso facto* ethical so far as the parties to the relation become conscious of one another—and thus mutually "responsible." An absolute state, representing irresponsible power (such as Treitschke's), might be expected to function without fuss and talk; to demand respect for its power is to appeal from power to reason. Hence, there are no modern states of any importance whose relations are not to some degree ethical, but, while the peoples of even European states remain so largely "foreign" to one another, the relations of states remain also largely unethical, *i. e.*, simply physical, or economic.

Professor Hoernlé, of Harvard, returning to the question of the "open door," urged that a distinction be made between cases involving equal cultures and those involving a higher and a lower culture. For example, the South African blacks, if allowed to develop their own culture, would turn to farming or grazing. But surely this is impossible; for who, then, would work the white man's mines? This sounded to me like good British-imperialistic doctrine; though I seem to have heard something similar from those ladies who cherish a moral indignation against the employment of women in factories, on the ground that it decreases the supply of household service. I seemed to understand Mr. Hoernlé better when he went on to say that (for equals, of course) we all desire some kind of international organization, but that those who would be wardens of international peace must keep themselves clean; and that this calls for a great development of moral consciousness in the private citizen as well as for a more intimate and diffused knowledge of peoples by one another.

Mr. Hocking, replying to the present writer, denied that mutual knowledge between peoples was sufficient to bring about a moral relation; since they might know one another and yet be unable to affect one another (a situation in which I seem to discern implications of telepathy). A moral relation, he contended, must be based upon a field of common good which imposes an obligation upon all.⁴ In line with Mr. Hoernlé, Mr. Hocking urged a distinction between

⁴ Here I should like to suggest two questions: (1) Is a good as between individuals a common good or a mutual good? and (2) can there be mutual knowledge without mutual good, and conversely?

sovereign states and partly-sovereign states. The most difficult of international questions is the allotment of territory to races. This should be determined, not by prolificacy, but by the contribution of the race to culture; which only the sovereign states are competent to measure.

Professor Calkins, of Wellesley, pointed out that, while Hocking and Overstreet both stressed the rights of national cultures, they were opposed on the question of sovereignty, and she wondered, therefore, whether by "sovereignty" they meant the same thing.

According to Professor Wright, of Dartmouth, if the decisions of an international court are to be obeyed they must be based upon some kind of popular and emotional appeal; which means that they must appeal to patriotism. We must have not only a common understanding, but a common feeling; and for this our main hope lies in religion and society.

By this time Professor Creighton, of Cornell, appeared to think that the discussion needed a cold bath; which he proceeded to administer by asking how the decisions of an international court would be enforced. If by force of arms, then, as was shown at Pekin, there appeared to be no difference in quality between national and international exercise of force. For his own part, he would rather appeal to the individual nations; if not persons, they, at least, have a conscience and are real. If we are to have international justice we should begin by carrying out our own laws; we can not expect to have justice between nations until we have it at home. Therefore he would stand, not for less nationality, but for a more intense national consciousness. And, after all, war is not so bad as a superficial amiability and a superficial peace.

I can only explain the failure to reply to Professor Creighton by the fact that luncheon had been already postponed. My own reply would be that I, too, prefer that virtue begin at home; which means, I take it, that while making the world safe for democracy we should also practise democracy. And I dare say that, as a hard fact, the policeman's club is not less brutal than the private citizen's fist. Yet civilization seems to prefer the policeman, even with his club. And as for "superficial amiability," it strikes me that, from a point of view really unsentimental, superficial amiability between nations is just the thing that we want first. Does any sensible man expect most of the persons whom he meets to be more than superficially amiable? And to how many is he capable of offering more? If genuine brotherly love thrives so slowly between individuals of the same race, how soon are we to expect much of it between races? Personally, I believe that, in the cause of decent international rela-

tions, it would be a great gain if we should postpone for a while the cultivation of brotherly love and begin with a recognition of the fundamental value for civilization of "superficial amiability."

Two more suggestions were offered before the discussion closed. Dr. Dunham, of Temple College, Philadelphia, thought it possible that the result at which we are aiming in international courts might be anticipated through the "horizontal" conference of classes; or, in his use of the phrase, by "peaceful penetration." Professor Cohen, of the College of the City of New York, pointed out that the chief service to be rendered by philosophers in the cause of international peace must consist in the enlightenment of the masses by a critical analysis of such phrases as "peace without indemnities," and the like. But if philosophers succeed in clarifying only a few ideas, I feel that they will surely be doing much.

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CONCERNING LOGIC

TO recall the drift of the comments upon logic offered at Princeton in December by members of the Philosophical Association might appear to be a task promising small chance for collective observation. What, in the way of common subject-matter, common tendency, or common point of view could one reasonably look for in a tentative innuendo upon Meinong, a tentative restoration of Aristotle, an untentative dismemberment of Bertrand Russell, and a query as to what—whether Aristotelian or Bradleyan, whether dressed in the symbols of an Englishman or of Mrs. Ladd-Franklin—logic pretends to be, anyway? Indeed, the four papers,¹ beguilingly simple in outward aspects, served their respective authors as an occasion for unburdening their minds upon problems of such variousness that not two categories or a dozen could be expected to cover them. The existential implications of Riemannian space, the status of Baroko, the legitimacy of introducing into the world *Inhalt*, *Objekt*, and *Objektiv*, the propriety of transplanting differences from terms to copula, the mysteries and glories of the null class—such topics among others figured in the discussion. From the midst of minute technicalities and occasional comprehensive generalizations, there emerged not always simple searchings for the truth, but avowals of allegiances and antipathies, and a strain of proselytizing as well as

¹ *The Subject Matter of Formal Logic*, by Morris Cohen; *Shall We Repeat Aristotle?* by H. B. Smith; *Symbolic Logic and Bertrand Russell*, by Christine Ladd-Franklin; *Meinong's Contributions to Logic*, by R. F. A. Hoernlé.

honest questioning. What might the timid reviewer, withdrawn a little from the dust of conflict during Mrs. Franklin's valiant and singlehanded passage of arms, thus belatedly make of it all?

Retrospectively, one is tempted—though perhaps by virtue of a too obstinate predilection for the discovery of likeness amid difference—to say that the main contentions of the four logicians contributed predominantly to one very general, very persistent, but unalterably interesting conflict—that between the new and the old, between modernity and traditionalism. It was not in each case the same innovation arrayed against the same dogma. Nor was the intended outcome invariably a strangling either of the novel or of the established in favor of its rival. For Mr. Hoernlé, for example, the safe and sane, as over against the new and questionable, was represented by the doctrines of the Oxford idealists as opposed to those of Alexius Meinong. Mr. Smith, on the contrary, brought forward nobody less hoary than Aristotle himself against the promoters of the newest fancies in logic. Moreover, while nothing short of an evaporation, however gentle, of Meinong's distinctions in favor of Bradley's terminology and viewpoint appeared to be contemplated by Mr. Hoernlé, Mr. Smith, with trustful impartiality, looked for a reconciliation all round in the interest of mutual benefits. Indeed, the explicit aim of Mr. Smith's remarks was to show that only by an acceptance of the null class, a totally modern invention, could some of Aristotle's syllogisms maintain themselves. From the discussion that followed there seemed to be, in the minds of members, a pretty general doubt whether Aristotle stood in any real need of special devices for the preservation even of his Baroko. The doubt was as solid, in favor of an unassisted Aristotle, as was the other doubt, made manifest after Mr. Hoernlé's paper,—the doubt shared by him, regarding the validity of Meinong's lucubrations. The tide thus turned in both cases against realism. It turned that way, in fact, pretty persistently. For the outcome of Mrs. Franklin's heated protest against the reading of Mr. Russell by those calling themselves metaphysicians amounted likewise to a victory for the anti-realists. Not that Mrs. Franklin argued specifically against the existence of "classes." Their downfall she quite fully took for granted, without need for further shots, in the prelude to her invectives against the later inventions of Mr. Russell. But the sympathy with which her hearers appeared on the whole to respond to her treatment of the copula *epsilon* carried with it a certain degree of anti-realistic enthusiasm. That enthusiasm, it ought in justice to be added, was partly the product of a kind of embarrassed discomfort felt, in the presence of a battery of mathematical symbols, by those

who had never read through the entire three volumes of the *Principia* with a marked degree of ease and pleasure. Similarly, might one not hazard, it was the barbarous language of Ameseder, quoted by Mr. Hoernlé, and the apparent wilfulness of some of Meinong's intricacies that accounted in part for the lack of sympathy felt for the German realist during the process of his inquisitorial ordeal.

Though the disapproval of the modern form of Platonic infection appeared to be spontaneous and genuine, there yet lurked, or so it seemed to the reviewer, under half-joking skepticism regarding the reality of the null-class—of any “class” in fact—and of such monstrosities as *Objekt* and *Objektiv* as subspecies of subsistent *gegenstände*, a timid interest in those queer beasts. Mr. Smith's paper immediately preceded lunch of the second day, and during its early courses the talk was not of syllogisms, nor of pragmatic proof, nor yet the Absolute. It had to do with the supposed nature and contents—the geography, so to speak—of that huge receptacle for all manner of impossible, self-contradictory and non-existent objects denominated the null class. For the thoughts of philosophers, realistic and anti-realistic alike, appeared to be hovering about the invisible threshold of that untraversed kingdom whose very existence was doubted, but whose portals had been thrown open, inviting believers and skeptics alike to enter. Aristotle's ability to get on without the assistance of the null class, and Meinong's inability to define without circularity the differences between an object of a *Vorstellung* and the object of an *Urtheil*—such circumstances, though important, doubtless, philosophically, seemed not quite sufficient to banish from the imagination and the emotions certain entities, insusceptible of proof, but somewhat glorious as to name and pedigree.

The reviewer, in all humbleness, is compelled at this point to confess that the recording of a special gleam in the eye and a slightly intensified philosophic ardor on the face of the company when the fate of strange-minded realists' protégés was in question, may conceivably be the recording of an hallucination induced by a quite private and personal feeling for the aforesaid protégés. It may be proper at once to absolve all anti-realists of the Philosophical Association from the charges of an even momentary impulse of friendliness toward the disputed members of the Platonic kingdom which possibly they felt not a whit. We have already confessed that it may be similarly due to an idiosyncrasy of mind that we asserted any connection between Mr. Hoernlé's assimilation of Bradley's “that” and “what” with Meinong's doctrines, and Mr. Smith's employment of twentieth-century Platonism as a crutch for Aristotle.

After which scanty notice of the logical trilogy and tentative withdrawal of all in it that may offend, we have still on our hands, uncommented upon, the admirable paper of Mr. Cohen. Here again the issue appeared to be largely between the new and the old, as represented, for example, by the pre-Kantian view of geometry as the science of actual space *versus* the present interpretation of the subject. In the subsequent discussion there was revealed an astonishing difference of opinion between Mr. Cohen and Mr. Smith regarding the existential implications of the laws of Euclidean and of Riemannian space. Thus again, though somewhat obliquely, did realism come into question.

Mr. Cohen defined logic and characterized its functions suggestively and with incisiveness. None the less the company never reached a total agreement on the relation of mathematics and logic nor on any other matter. For reflections on the advantages of this circumstance, those interested are referred to the discussions of the meeting in 1913.

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REVIEWS AND ABSTRACTS OF LITERATURE

The Mythology of All Races. LOUIS HERBERT GRAY, Editor; GEORGE FOOT MOORE, Consulting Editor. Boston: Marshall Jones Company. XIII Vols. Vol. I: *Greek and Roman*, WILLIAM SHERWOOD FOX (1916). Vol. VI: *Indian*, A. BERRIEDALE KEITH; and *Iranian*, ALBERT J. CARNOY (1917). Vol. IX: *Oceanic*, ROLAND B. DIXON (1917). Vol. X: *North American*, HARTLEY BURR ALEXANDER (1916).

This experiment in popular synthesis of exotic material can not but arouse the liveliest sympathy and interest among the reading public at large as well as among professional students of primitive lore. Thus, the editors are to be congratulated upon the entire plan of publication and, on the whole, upon the way in which it has been carried out to date. From the standpoint of book-making—and in a series such as this the item is not unimportant—the four volumes before us deserve the highest praise. The books are well printed on excellent paper and embellished by a considerable number of illustrations in the text as well as by full-page tables, usually selected with care and invariably of high technical excellence. As to the contents, a synthetic presentation of the world's mythic lore has for so long been a desideratum, that to see a first attempt in this direction actually *im werden* is most satisfying, and one is tempted to

overlook inevitable shortcomings in his appreciation of the entire scheme.

While a more systematic analysis of the contents of the series will be in place when all the volumes have left the press, a few comments may not come amiss at this time. While the intrinsic interest of Professor Fox's discussion of Greek and Roman myths and cosmogonies is, of course, high, the author is not always careful in statements of fact as well as theory. The abstract of the *Iliad*, and especially that of the *Æneid*, given by the author are not accurate, and, in spots, positively incorrect. On page 154 Zeus is credited with having devised means for breaking the truce between the Trojans and Achæians, a function which can not in truth be ascribed to him. The linguistic derivations adduced do not always carry conviction. Examples will be found on pages 169, 189, and 219. As to theories, one can scarcely accept the statement (p. xliii) that a myth was "accepted as true by its original maker and his hearers." It is also regrettable that Professor Fox has so seldom included in his presentation the variants of the myths and incidents cited in some one version. The common practise, often adopted by the author, of making up a connected account by combining several versions or sets of incidents, is also a dangerous procedure, often resulting in a distorted picture of the aboriginal material. The sketches by Dr. Keith (Indian) and Dr. Carnoy (Iranian) are on the whole admirable. One is particularly interested to find how much of the ancient lore and fantasy is still to be found among the population of modern India, largely, no doubt, brought down from remote times through the channels of tradition, but in part, perhaps, recreated by the popular imagination under the combined influence of a common environmental and cultural background. Dr. Carnoy's summarizing remarks at the close of his study (pp. 350-351) arouse some dissent. While it is true that myths, when "no longer understood," will often degenerate into mere tales and break up into incidents which, under varying names, may even become unrecognizable, the opposite process must not be lost sight of, namely, the constant accumulation of incidents in the body of a complicated myth, and its consequent growth by accretion, leading to an ever-increasing mass of incidents which, having been subjected to secondary processes of psychological assimilation, often lose their original identity, a veil thus being drawn over their historically disparate provenience. Professor Alexander, in dealing with North American mythology, tried to be very concrete, eliminating almost wholly comment and interpretation. Yet there is not a little subjectivity in the way the author classifies and presents his material. The grouping of mythologies according to environmental setting—Forest, Plains, Mountain and Desert,

Gulf, etc.—is at best a hazardous procedure. It has been often attempted, but the resulting grouping is always artificial, leading to an overemphasis of often far-fetched similarities as well as to the marring of differences in really significant and typical traits. Nor may we endorse the author's dictum that "stories which satisfy curiosity about causes are true myths" (p. xviii). The position represented by the author, while in line with time-honored tradition, has of late been rudely shaken by the onslaughts of more detached spirits among folklorists and ethnologists. While recognizing the essence of myth in the blending of magical, supernatural with novelistic, literary elements, the modern student often fails to discover the explanatory nucleus at the root of the myth. In fact the explanatory features are frequently associated with the myth in such a way that no doubt can remain of their secondary and wholly adventitious merging with the original story. On the other hand, Professor Alexander is certainly right in asserting that "the fundamental material of myth is rather a collection of incidents fitted into the scheme of things suggested by perception and habit than the stark invention of nature; and while the incidents must have an invention somewhere, the greater portion of them seem to be given by art and adopted by nature—borrowing and adaptation being, for the savage as for the civilized man, more facile than new thinking" (pp. xxiii-xxiii).¹

Professor Dixon's contribution to the series is, without doubt, the most notable one to date. It will meet with deserved appreciation on the part of the more serious reader. Oceania has for some time been known to the ethnologist as a most fascinating yet almost hopelessly complex field of investigation. As to the layman, he has learned to admire in museums the kaleidoscopic featherwork of the

¹ A passage quoted by the author from Rasmussen's *The People of the Polar North* (p. 219) deserves to be reproduced here on account of its intrinsic interest. The passage consists of a statement made by "Blind Ambrosius," a West Greenlander, and reads as follows: "Our country has wide borders; there is no man born who has travelled round it; and it bears secrets in its bosom of which no white man dreams. Up here we live two different lives; in the Summer, under the torch of the Warm Sun; in the Winter, the lash of the North Wind. But it is the dark and the cold that make us think most. And when the long Darkness spreads itself over the country, many hidden things are revealed, and men's thoughts travel along devious paths." A psychological situation such as is suggested by the above passage has often occurred to the present writer, while he was engaged in certain studies of Eskimo culture. It is indeed to be expected that a double existence under periodically recurring conditions of darkness and light, with all the concomitant changes of environmental setting, might result among a primitive people in a state of split *mores*, a kind of a double code of behavior, in economics, religion, nay, even ethics itself. The problem has never been investigated; hence, it is hereby commended to the attention of ethnologists and others with Arctic leanings.

Hawaiian, the finished technique of Polynesian clubs, the esthetic intricacies of the elaborate Maori carvings, but he would find himself utterly at a loss if called upon to characterize even in a most superficial way the customs and ideas of these seafaring peoples. With reference to social structure and function the gap was partly filled by a recent work of Dr. Rivers on *The History of Melanesian Society*. For mythology, and indirectly for religion, a similar task has been fulfilled with some success by Professor Dixon. Of the five regions discussed, however, only Melanesia and Polynesia are adequately represented, the treatment of Indonesia is full only in spots, while Micronesia and Australia have been neglected to an extent not to be justified even by the paucity of the available material. The cosmogonies of Melanesia and Polynesia, on the other hand, in their evolutionist as well as special creationist forms, are represented most satisfactorily. Thus the exotic flavor of this wave-weaned lore is for the first time brought within the reach of the layman, the lore which some half a century ago proved to the old globe-trotter, Bastian, a source of well-nigh inexhaustible inspiration. In his theoretical interpretations Professor Dixon is not always successful. Here the reviewer must take sides with a common colleague and against the author, particularly in connection with the latter's utilization of the theory of migration and diffusion of culture, in an attempt to account for the two types of cosmogonic theory current in the South Seas.²

In concluding, it is not necessary to repeat the well-deserved praise bestowed upon the work. As to its shortcomings, three might be singled out as of special importance. The myths are not usually given in the form current among the people themselves, but are rather used as raw material for an artificial synthetic account. While to a certain extent this is unavoidable, Professor Dixon's contribution well shows the weakness of the other volumes in this respect. The literary form of the myths is nowhere indicated beyond the most superficial way. As a result of this omission, the similarities in content of the myths are often exaggerated, whereas even the most significant contrasts in form or literary style are usually marred or disappear altogether. It is, finally, to be regretted that the authors of the several sketches have not found space for even the briefest presentation of the other aspects of the cultures of those peoples whose mythologies they have brought before the reader. Had one tenth of the space in each of the four volumes been devoted to this purpose, they would not have made any more tedious reading for the

² Cf. *The New Republic*, January 5, 1918, p. 289.

special student, while their value to the layman would have been enormously enhanced.

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The Fundamentals of Psychology. W. B. PILLSBURY. New York: The Macmillan Company. 1916. Pp. 562.

Professor Pillsbury, whose *Essentials of Psychology* has been perhaps more generally useful than any other American text, has here undertaken a task in which he can scarcely expect to satisfy any one completely. There is fairly general agreement regarding the material that ought to be presented in an elementary text-book, and on the other hand a monumental treatise like Wundt's *Grundzüge* should, it is clear, contain everything that is known about a subject. But an intermediate text-book, intended to be studied by the pupil who knows the elements of the science, but not undertaking to discuss any topic exhaustively, is sure to come in for criticism on its selection of material. It is easy to quarrel with the author for over-emphasizing certain topics (why need the student occupy even a single pulse of attention with the fact that the intraocular pressure amounts to about 25 mm. of mercury in the normal individual?), and dismissing others hastily or ignoring them entirely (there is hardly any mention in the book of reaction time or psycho-physical methods). But it would be far from easy to write a book whose choices would provoke any less criticism. One may, I think, fairly object that if any names at all were to be mentioned in the text or in footnotes as authorities for facts, such references should have been much more adequate and complete: the selection of names actually made is likely to give the student a distorted view of the relative importance of authorities.

The author's conclusions on disputed points, where he states them, are such as seem to me sound. He correctly points out that the experiments of Cannon and Sherrington do not overthrow the James-Lange theory of emotions. His treatment of the self is suggestive and satisfactory. I should have preferred to have the motor theory of attention more adequately presented, if not adopted. There seems no especial gain in trying to make the conditions of attention identical throughout with those of association: change, the most important objective condition of attention, has no parallel among the conditions of association. In his opening chapter, Professor Pillsbury says: "We shall endeavor as far as possible to keep the explanation of physical states in terms of antecedent physical states, and the explanation of mental states in terms of antecedent mental states, and assume as little interaction between the series as

is possible." It is perhaps needless to say that he does not carry out this impossible programme, but presents both physiological and psychological explanations for mental states, adopting whichever seems most nearly adequate without worrying about interaction.

The reviewer's chief regret concerning the book is its style, which must be called extremely careless and often far from clear. The actual writing must have been very hastily done. But as a busy teacher one can not find it in one's heart to judge a colleague too severely on such a point.

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JOURNALS AND NEW BOOKS

JOURNAL OF ABNORMAL PSYCHOLOGY, October, 1917. *The Psychological Clinic of Southern California Association of Applied Science* (pp. 217-231): Reported by F. E. OWEN. — The work of the Psychological Clinic, opened in September, 1915, under the direction of Miss Margaret Hamilton, is discussed with emphasis on her methods, principles, and points of view. *Insanity in American Prisons and the Prison Psychosis* (pp. 232-239): G. W. BROCK. — A summary of the conditions in many states concerning the care of the criminal insane is given, with an appeal for equally good care for the criminal insane as is given the civil insane in our best state hospitals. The assistance of alienists and psychologists to sort out and classify the social misfits is being more frequently sought in our courts. *The Conduct of the Insane: A Contribution to Psychopathological Theory* (pp. 240-256): HAROLD I. GOSLINE. — The study of 250 cases was made and among other conclusions is the one that the reaction of patients fall into two groups, strong and weak. A bibliography is appended. *A Discussion of the Mechanism of Mental Torticollis* (pp. 257-259): L. PIERCE CLARK. — The torticollitic is a profoundly neurotic individual whose infantile emotional life is an arrest or fixation in a diffused way on the parent, on himself, and to a less degree, upon his own sex, and because of such an emotional arrest his main trends of character are weak and inadequate. *Stammering Discussion* (pp. 260-264): ERNEST TOMPKINS. — The confusion of the words stammering and stuttering is explained. The ratio among men and women for stammering is generally given 9:1, for boys and girls 3:1. There must, therefore, be recovery, since stammering rarely is contracted after age of twelve. *Notes and Reflexions from the Fields of Abnormal Psychology* (pp. 265-276). — Thirteen interesting notes are given, including quotations from

many authors. Reviews: Binet and Simon, *Mentally Defective Children*, translated by W. B. Drummond, W. F. DEARBORN. DeFurac and Rosanoff, *Manual of Psychiatry*, Fourth Edition, E. STANLEY ABBOT. *Proceedings of the American Society for Psychical Research*, Vol. IX., Part I., Vol. X., Part II., Vol. XI., MEYER SOLOMON. Augusta F. Bronner, *The Psychology of Special Abilities and Disabilities*, MEYER SOLOMON. Winfred Lay, *Man's Unconscious Conflict*, MEYER SOLOMON. Boris Sidis, *Philistine and Genius*, MEYER SOLOMON. *Books received*.

Pintner, Rudolf, and Anderson, Margaret M. The Picture Completion Test. Baltimore: Warwick & York, Inc. 1917. Pp. 99. \$1.25.

Terman, Lewis M. *et al.* The Stanford Revision and Extension of the Binet-Simon Scale for Measuring Intelligence. Baltimore: Warwick & York, Inc. 1917. Pp. 172. \$1.40.

Jones, Edward Safford. The Influence of Age and Experience on Correlations Concerned with Mental Tests. Baltimore: Warwick & York, Inc. 1917. Pp. 89. \$1.25.

Lyon, Darwin Oliver. Memory and the Learning Process. Baltimore: Warwick & York, Inc. Pp. 179.

Vilfredo, Pareto. *Sociologia generale*. Florence: G. Barbara. 1916. 2 vols.

Marchesini, G. *Logica elementare (con 100 esercizi)* Florence: Sansoni. 1917.

NOTES AND NEWS

M. HENRI BERGSON, having been elected by the French Academy to the place left vacant by the death of Emile Ollivier, made his address of acceptance at the session of January 24. M. Bergson's address, a vindication of his predecessor, appeared in *Le Temps* of January 25. The reply on behalf of the Academy was by M. René Doumic.

The Rivista di Filosofia for January 24, 1918, continues the bibliography of philosophical writings in Italian begun in the preceding number.

The Revue de Métaphysique et de Morale begins in the number for January-February, 1918, the publication of Emile Durkheim's course of lectures on "The Social Contract" of Rousseau.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

DUALISM AND EARLY MODERN PHILOSOPHY¹

THE chief distinction, it has been said, between ancient philosophy and modern philosophy is that the former was cosmological, the latter, epistemological. It might have been added, and with equal truth, that modern philosophy, in becoming epistemological, had become psychological as well. Or, if philosophy has always possessed a psychological interest and basis, modern philosophy may be termed *psychological* in a sense deeper and more far-reaching than any sense in which the term could be applied to pre-Christian thought. This is indicated by the rather peculiar fact that so many of the classics of modern philosophy are important marks in the history of psychology. Furthermore, the more consciously epistemological the character and purpose of the work, the greater is its significance for the development of psychological theory. In these works the psychology of the writer—that is, what we of to-day would call his psychology—is inextricably interlaced with the epistemological inquiry. A treatise on the passions of the soul or a study of the sense-organs and sensation is called “philosophy.” And this expresses not merely the ancient inclusiveness of the term, but also the fact that such a study was felt to be peculiarly germane to philosophy in the narrower sense of the latter term. With increase of specialization in investigation and the partitioning of the realm of events that ensued upon the acquisition of new conceptual instruments and the development of new distinctions, a more conscious methodology and direction of purposes

¹ This paper is a synopsis of the introductory portion of a larger writing which the author hopes to undertake. In this it is planned to trace historically the effects of the philosophical doctrine of a dualism of substances upon psychology in its earlier modern stages; and also to portray the influence exerted by the psychology grounded upon that doctrine on the course of later philosophy, and more particularly, of epistemology. It is an essential element of the thesis to be maintained that the after-effects of the dualism appear even in times and in movements in which the two-substance theory is formally discredited. This note is appended in order to indicate the context in which this paper is to be understood and also as an explanation of its incomplete character. The writer wishes to acknowledge his indebtedness to Professor John Dewey for the assistance in writing this paper derived from his suggestions and criticisms.

arise. As a consequence, psychology has gradually acquired a certain independence of philosophy and a more dignified status as a science in its own right. Yet even now philosophy is as dependent on psychology as in the days when the distinction between the two had not been recognized. The point of importance is not that psychology attained its independence so late, but rather that only in the light of present distinctions and present relations between philosophy and psychology can we discriminate between the *psychology* and *philosophy* of the early-modern classics. Perhaps it may become apparent that even after their divergence their courses of development were determined by the assumptions and prejudices inherent in their common origin. The persistence of these elements still obscures the problems of psychology and epistemology. Psychology, even to-day, is bothered with the encumbrances of its heritage. It has won its independence of philosophy in a formal sense; the psychologist to-day may go his way, if he so please, in serene indifference to philosophical dictation. But psychology has not yet won its independence of the philosophic doctrines of the days of its youth. The hands of Locke and Descartes are still upon it.

The psychological character of early-modern epistemology is, of course, a commonplace of the history of philosophy. Modern philosophy, devoted primarily to the problem of knowledge, turned to psychological investigations. Philosophy had done this before, but never so whole-heartedly and with such conviction of the unqualified necessity for such aid. The first step in philosophizing was the examination of the knowing subject and his powers.

It would be a one-sided view, however, to think that the needs of epistemology alone account for the movement. The emphasis on the desirability of a study of the *human understanding*, the *soul*, the *faculties of the mind*, and the *nature of ideas* is not wholly explained by the demand for a solution of the knowledge-problems. It is equally exact to state that the problem of knowledge became acute because people had acquired certain general convictions as to the human understanding and the thinking principle. Ideas concerning the nature of the knower—in short, the character of the prevailing psychology—are partly responsible for the rising demand for psychological aid in epistemological inquiry. Some of the difficulties which Descartes, Locke, and their compeers encountered are attributable to notions of a psychological kind which were prior to their investigations and determinative of the course of inquiry rather than resultants of their investigations.

It was a jumble of ideas, needs, beliefs, and aspirations that created the situation that early-modern philosophers faced. The position of psychology as a necessary propædæutic for epistemology be-

came clearly perceived and expressed a clearly cognized purpose. But this did not happen all at once. The process of clarification took time. The important point is that when the need of such a propædæutic was clearly conceived, the conditions that generated the psychological problem had already partially organized the subject-matter of investigation. The epistemological demand for detailed knowledge of the subject's constitution and powers became imperious under the surveillance of certain general ideas as to what that knowing subject is. Psychological problems, therefore, received formulation within the limits of metaphysical notions of the nature of human life, the human being and the world. This was speedily revealed: at an early date psychology is forced to deal with two worlds, the worlds of matter and mind, corporeality and spirituality. On the one hand it was forced into physiological channels, and sensations and sense-organs, images and animal spirits were of capital importance. On the other, it had to delve into the depths of the soul, to expound the operations of spirit; and reason, the inner light of nature, and the immediacy of conscious experience were of pressing concern. Metaphysics was adumbrated in psychology, and psychological findings did not lack metaphysical reverberations. In the course of time the problems of mind and body came to be almost indissolubly connected with psychology and psychology with them. Just what psychology is, what its subject-matter is, and how it should study that subject-matter are questions not wholly decided even in the present.

A cursory survey of recent tendencies will reveal many more or less sporadic attempts to eject the mind-body problem from epistemology and psychology, and, if it be adjudged a genuine problem, to relegate it to metaphysics. The attempt to write a psychology without a soul is no new quest; the more recent plan, it seems, is to write a psychology without a consciousness. The parallelistic doctrine (and for that matter the interactionist doctrine with its virtual parallelism) are coming to be regarded as heuristic principles to be retained until such time when they will no longer be of service. Whatever may be the immediate causes of the so-called behavioristic movement, at a distance it may be viewed as a struggle against the ancient entangling alliances.

These movements are symptomatic of a deepening conviction that "soul" and "consciousness" have too often served as a reliquary for the irreducible elements of difficulties, if not, indeed, a matrix in which problems of doubtful validity are engendered; and further, that the problems of consciousness have too often been saddled upon psychology. The desire to reduce the rôle of consciousness to a minimum is evident—one can surely appeal to the Neo-Realists as wit-

nesses. Professor James has expressed the opinion that consciousness, even as in the past the less innocuous term soul, is on the verge of disappearing from philosophy.² Yet with all this we can still trace the persistent influence of the metaphysics that presided over the birth of modern psychology.

If psychology in modern philosophy received its peculiar direction through conceptions common to the thought of that time, philosophy, resting upon a psychological basis, has inevitably been affected by the effects in psychology of those conceptions. The process is circular. Psychology received a certain character through the philosophical matrix from which it sprang; and later philosophy, through its appeal to psychology, is influenced in devious ways by the older doctrines which often it wishes to repudiate. These influences will be enumerated in the sequel. For the present, the point to be made clear is that if philosophy originally prejudiced the character of psychology, psychology in turn has affected the character of philosophy; thus psychology continually acts as a linkage between early-modern and more recent philosophies.

A study of the influences under whose auspices early modern psychology got under way may serve to cast light upon the present difficulties of psychology and philosophy; and in that hope this essay is presented. Now it seems to the writer that many difficulties of psychology and philosophy are derived from the influences of the doctrine of the dualism of substances in its interaction with medieval ideas concerning knowledge and the growth of the new sciences of nature. Psychology occupies at present an anomalous position. On the one hand, it is generally regarded as having a peculiarly private realm of data of its own, the events of consciousness, the mental life, or the psychical. On the other hand, explicitly or implicitly, it is forced to concern itself with a twofold set of data—the psychical and the physical (and neurological). It may claim its own realm of data, but continually leaves it to enter the fields of the physicist and neurologist. There are, perhaps, some movements gathering strength that would leave the realm of the psychical and place psychology squarely in the neurological field. But it is noteworthy that such tendencies are to many inquirers equivalent to an abandonment of the psychological enterprise altogether. For the most part, to the orthodox the science is concerned with two existential series, the psychical and the neurological. The extent to which the one or the other series is considered as primarily the province of the science varies with the point of view of the student. But in the main the results of investigation are formulated in terms that imply the two existential series.

² William James, *Essays in Radical Empiricism*, p. 2.

The psychologist is content to leave the question of the relation of the two fields to the metaphysician. He may be privately convinced of the ultimate irreducibility of the two series, or he may have the opposite belief; but as psychologist, the duality is generally accepted as a necessary assumption or working principle of the science; or at least as the readiest way of getting rid of a nasty problem. Some sort of correlation between the series—the neuroses and psychoses—he is compelled to posit or admit in order to facilitate his work; psycho-neural parallelism or psycho-neural interaction are the hypotheses generally resorted to. And if the radical asserts that his science does not need to take into consideration consciousness or the psychical, and avoids them in the formulation of problems and results, he is at least put in the position of one reacting violently against tradition and orthodoxy.³

The state of affairs is such that one might bluntly put the question: if psychology is physiological, dependent on neurology, or to the extent to which it is so dependent, is it psychology at all? Certainly in one sense the query is pertinent: is there such a thing as physiological psychology? One extreme answer might be that there is no such thing, that neurological facts are wholly irrelevant to psychology properly speaking. But such a view would have few adherents to-day. At the other extreme would be those who anticipate the complex reduction of psychology to the physiology of the nervous system. The more common view is somewhere in between the extremes, and psychology straddles the two realms of data as best it may. The experimentalist who is suspicious of the introspective method may formulate this apparent dilemma: if “psychology” isn’t a branch of physiology and neurology, it is no science at all; if it is a part of neurology, it isn’t “psychology” in any recognizable sense. The escape from the privacy of the individual consciousness is provided for by neurology, but neurology seems to be a departure from the psychical and from consciousness, and, therefore, to some minds, from psychology in the orthodox sense. There are some, perhaps, who anticipate the time when neurology, by a process of pacific penetration, will completely absorb the other science; and there are surely others who would deny that such a thing can come about.

This jumble of opinions, which surely does not parody the present situation, originates in the conception of the dual series of existences. The conception is awkward, problematic, but withal safely ensconced in scientific tradition and even more in the cultural tradition; it often seems unavoidable, but continually hampers and

³ There are, probably, psychologists to whom Professor Watson’s *Behavior* is a valuable contribution, while at the same time they are not sure whether the book is a contribution to psychology, or to some other science, as yet unnamed.

prejudices research and discussion; it provokes vexatious and insoluble problems, and it is used as a solution for problems. Psychology, in so far as it rests upon the notion of the dual series, is in unstable equilibrium. A psychologist who combats the genuineness of the idea, or its heuristic value, is immediately placed in an attitude of defiance; his position needs justification, and his apologetics has its center in a metaphysical problem.

Since epistemological theorizing customarily utilizes psychology as its point of departure, these difficulties in psychology are reflected in the former. Strive as we may, we can not wholly evade the consequences of carrying on the epistemological inquiry on the presupposition of existence and experience as dual. It is a difficult feat to avail oneself of psychological results formulated openly or secretly in language reflecting the duality, without erecting that duality of experience into a presupposition of the inquiry. The epistemologist may be a monist in his metaphysics, and yet his monism is often attained by the attempted establishment of the ultimate identity of the two series as modes of one substance, or the reduction of one of the series to the other; but this leaves the duality with credit scarcely impaired so far as the realm of immediate experience and inner and outer phenomena are concerned.

The epistemology that frankly accepts the duality of experience and existence and a psychology built upon that conception is forced to deal with two worlds—a world of things (including the stimuli of psychology) and a world of mind or consciousness. By definition they are qualitatively distinct, and at least in appearance irreducible. Since doubt that we have any knowledge at all does not trouble the lives of most people, epistemology in the main does not try to show how more knowledge can be attained, but how it happens that we have any at all, and the metaphysical status of the things we are said to know. A radical blighting skepticism about knowledge seems to be characteristic of very few people. A few disagreeable people jeer at the epistemologist by saying that everybody accepts the fact of knowledge while nobody can explain it—at least to the satisfaction of every one who cares about an explanation. Now the vital center of the difficulties encountered is this, that epistemology confronts the task of relating two worlds which have been more or less explicitly defined as unrelatable, or whose relation must be established outside of epistemology, if at all. Of course positions vary, and the foregoing is simply a general characterization. But the thought that knowing goes on in one world, while most of the things supposedly known are in another and qualitatively different world, is pretty general. The assumed equivalence of the expressions *to be experi-*

enced, to be in mind or consciousness, and to be known which Professor Dewey so strenuously contests, indicates the situation. If the epistemologist accepts the traditional dual series of events, whose dissimilarity is just one degree less striking than their concomitance, he is plagued with the vexatious circumstance that the knowing process is remote from the things known. If knowing is psychical and the things immediately dealt with are psychical, then any establishment of a connection with the totally different physical events is out of the question; for however circuitous the process of attempted verification, it goes on within the sphere of the psychical. Correspondence, however forcibly impressed upon us, must always remain matter of faith. A psychologist may accept the dual view, and accept the world of extra-psychical (physical) stimuli without bothering about proving its existence; while some epistemologists are constrained to doubt the existence of that world, must prove its existence, and make desperate efforts to prevent its being engulfed in the maw of an insatiable consciousness. Another type of epistemology may turn the difficulty into its fundamental principle, and *esse est percipi*, where the percipient and the perceived are psychical, defines the limits of discourse. Sundry efforts are found to make consciousness and the psychical disgorge the world it has swallowed and establish its independence. There is no need to enumerate the various ways in which the common difficulty is handled. So long as we are by definition confined to one world, getting to the other is equally by definition impossible. It seems that either the duality must be removed or the problems of epistemology so defined that, if such a thing is possible, the duality has nothing to do with it.

The writer is not concerned with the criticism of epistemological theories nor has he a theory to offer. The purpose of the paper is rather to discuss in some detail how the situation just outlined has come about. The problem is to indicate the interaction of conceptions which led to the duality of existence as the groundwork of psychology and so of epistemology.

The complexities of the total movement from orthodox scholasticism to the more or less definitive setting of modern psychological and epistemological problems reduce to three major moments: first, there is the dualism of substances as precipitated out of a plurality of qualitatively different substances; secondly, the newer scientific view of nature, of causality, and mechanism, and the establishment of the causal relation between object and sense-process; and, thirdly, the orthodox correspondence theory of knowledge in scholasticism and its later transformations. It is the interweaving of these three sets of ideas which eventuates in the situation whose origin we are attempting to outline.

The evolution here considered consists primarily of the genesis of the two-substance theory (with the body-mind dualism as a secondary form) and from this the genesis of the conception of the dual existential series. It is the latter doctrine which continues to influence psychology and epistemology long after the notion of substance has been dispossessed of its autocratic rights and driven from the field of psychology, an achievement largely to be accredited to Berkeley and Hume, who succeeded in turning substance from dogma into a problem of a transcendental character. The substance notion reappears, of course, but again as metaphysical and epistemological in so far as it could hardly be the one without the other, owing to the affiliation of the two disciplines. The process was about as follows: the attack on the doctrine of two substances, mind-substance and matter-substance, took two directions under the impulsion of dissimilar interests: on the one hand, there occurred the demolition of the notion of substance, and with its disappearance from psychology, the notion of two serial orders of existence, the extra-organic and intra-organic changes as one type (the field of physico-chemical science) and the (occasional) psychical accompaniment, the series of which constituted the second type, mental, psychical, or spiritual existence. On the other hand, under the influence of a strong metaphysical impulse, a monism of substance supplants the duality.

Now as the notion of substance, particularly in the form of the substantial soul, became evanescent, and this especially in the empirical tradition, the conception of a dual series of events has a double form, and involves a twofold correlation. Consciousness, mental states, or the series of psychical events, come to be treated as existences on their own account. The psychical fact is correlated, first, with the extra-organic object (stimulus, physical or chemical change), secondly, with the intra-organic neurological process. The former correlation represents the survival and adaptation of the older notion of the cognitive correspondence of idea and object. The latter correlation stands as a sequel of the older theory of objects causally impressing the soul through the nerves and animal spirits. Now according to the older doctrine of the two substances, interaction took place between the soul-substance and matter-substance. How it occurred was a mystery, of course, but was accepted as a supposition necessitated by the apparent nature of the facts of experience, especially of the volitional type. But with the growth of the dual series conception, the development of chemistry, physics, mechanics, and neurology, the notion of the interaction became more intractable; its mysteriousness became almost equivalent to unthinkableness. The dropping out of the substantial soul, with its own

potencies and hidden springs of energy, facilitated the rejection of the notion of the interplay. A psychology, in particular, that becomes progressively convinced of the subjectivity of sense-qualities and of the radical dissimilarity of quality and stimulus (and nerve-process), and resolves mental processes into elements of sense-qualities, has little use for interaction, and the notion of the governance of body by soul is meaningless. Mechanical causation, naturally, had its share in the movement. At any rate, though the notion of interaction never disappears completely, and the hypothesis of psycho-neural interaction persists as the modern representative of Descartes's theory of the unique functions of the pineal gland, the correlation of mental process and physiological process comes to be generally formulated as a parallelism of entities. And after all, the interaction hypothesis does not so much deny the qualitative unlikeness of the psychosis and the neurosis, nor their correlation, but rather, accepting these points, insists upon the interaction of the correlated processes, with, of course, allowance for the changes in the notion of correlation demanded by this additional element. Further, history seems to show that it is the interactionist who finds the reintroduction of a soul-principle most congenial.

Beyond the correlation, with or without interaction, psychology as such does not profess to go. The residual problems are metaphysical—and psychologists frequently seem relieved to get rid of them by this assignment. And here the metaphysical interest in substance reenters. A monistic ontology that succeeds a dualistic metaphysics finds a survival of that dualism shoved back upon it. Metaphysics must assimilate the duality that psychology, willingly and wittingly or not, has cherished. This means the assumption of the contrasted fields of existence as a metaphysical problem. The types of solution are various: the series become modes and phenomenal appearances of a single underlying truly real substance; or mayhap the "physical" series is found to be a projection and petrifying of the psychical series, so that after all there is but one type of phenomenal existence and in the psychical we meet with final reality. Or again the psychical series may be taken as an epiphenomenal manifestation of physical energies. Interaction is provided for or not, as the case may be. This is no exhaustive enumeration of the ways in which the assimilation occurs. The point of interest is that a monistic metaphysics is achieved by the *Aufhebung* of a duality that is in effect widely accepted.

This appears to be the general outline of the movement. If it is a characterization and not a caricature, the dualism of substances and the basing of psychology on the correlation of two existential

series force epistemology to deal with the problem of two worlds. The process has been, and continues to be, cyclical: epistemology and metaphysics assist in determining the character, methods, and data assumed by psychology and, in turn, using that psychology as its instrument, take upon themselves the perpetuation and solution of the problematic elements foisted upon psychology. The attempt to free metaphysics of epistemology misses fire—it would be better to free it of psychology and Descartes. And about the only way of freeing epistemology of psychology seems to involve calling traditional types of psychology all wrong.

The ideas which reached maturity in the thought of Descartes had a lengthy history, and a glance at the course of their development presents the outcome in a clearer light. Descartes, under the influence of relatively new ideas, precipitated from a solution of ancient ideas and convictions the dualism of substances and its corollary, the dualism of mind and body. The severity and stringency of the dualism had been approximated before, but it was primarily Descartes who fastened the thought of the duality upon the modern common consciousness.

Although in the philosophy of Descartes the mind-body dualism is really subordinate in importance to the general dualism, it may be that a gradually mounting conviction of the separability of body and soul, and of their dissimilarity in essence, value, and destiny was a prime factor in crystallizing the doctrine of the universal duality of substantial existence. That is, in the history of culture, as well as of philosophy proper, approximations to a duality of mind and body, coupled with other matters, were operative in producing a wider ontological dualism which involved the duality of mind and body in the human being as a corollary. It would be impossible within the compass of this paper to do more than hastily sketch these growing intimations of a radical difference between soul and body as it is found in the culture of earlier ages; a discussion of the transformations of the notion of substance in philosophy itself is hardly necessary. For it is the former that are more frequently neglected.

Certainly the notions of the separability of soul from body, of its immortality, and of its self-contained essential energy, long preceded the idea of a duality of substance. Erwin Rohde has shown that in general the feeling of the disparity of soul and body was engendered by religious interests among the Greeks, and more particularly by those Thracian cults whose origin indicates that they were not native to Greek genius; these cults were really intruders, and were never completely assimilated by the Greeks; and to whatever extent they

were assimilated, they were transformed. According to Rohde, the notion of an after-life of the soul in what is to us the proper sense, as a life peculiar to an immaterial principle, as we conceive it, was on the whole foreign to the Greek.⁴ But the cults of Eleusis and Dionysos contained the germs of those sharp moral and metaphysical contrasts which were peculiar to the spirit and needs of post-Aristotelian times, and were largely characteristic of the Oriental religions which flooded the Roman Empire. Among these fruitful elements was the cultivation of ecstasy, in which the soul is possessed by the God, or is in union with Him; this entered Greece as a new thing in the cult of Dionysos.⁵ The ecstasy was a foretaste of eternity, and its exaltation an evidence of the imperishability of the soul and of its separability from body. The necessity for purification is a corollary of the cult of the ecstatic moment, and of union with the deity. But again, just these ideas place the body in the position of a hindrance and encumbrance to the flight of the soul. And this idea could readily be assimilated by the notions of an inherently evil element in man and of the imprisonment of the soul in the body as a punishment and expiation, which the Orphic sect especially inculcated.⁶ Such ideas, however, were never wholly accepted by the Greeks; and they remained in large part excluded from the course of reflection and speculation. They reach their fruition in a later period.

Now these ideas, in so far as they were, or became, Greek, were elements of the religious culture of a folk, not the products of philosophy. They were, besides, infiltrations from without. The Homeric religion had no such spirit, and in so far as the formal official religion came to have them, they were acquired by this infiltration, and then not without opposition and transformation. Philosophy, however, from the start gave a different content to its terms from that connoted by the same terms in the cults and mysteries.⁷ It is noteworthy that the closest approximations to notions of the duality of soul and body and the radical difference between them appear in Plato, who seems to have felt the influence of the cults and mystics and mysteries more than any other of the greater philosophers. In this sense Aristotle more genuinely represents the philosophical tradition and Greek reflection than Plato.

It is in the writings of Plato that we discover the chief philosophical fountain-head of dualistic views of nature and man. Plato's teachings concerning the soul have their obscurities and in-

⁴ Rohde, *Psyche*, 3d ed., 1903, Band 1, p. 300.

⁵ *Ibid.*, Band 2, p. 4.

⁶ *Ibid.*, Band 2, pp. 20, 80, 101, 119 *et seq.*

⁷ *Ibid.*, Band 2, p. 139.

consistencies. The total effect, however, of his doctrine is to establish a dualistic view of man; or at least his doctrine could easily be accommodated to such a belief. His thought manifests the influence of the older theological views concerning the immortality of the soul, its dissimilarity from body, and the encumbrances to the true life of the soul that the body presents. The soul flutters uncertainly in a domain that is somehow above body and the sensible world and is somehow below the world of Ideas; in its pure, spiritual, and incorporeal nature the soul resembles the ideas more than it resembles anything else.⁸ Plato's difficulties revolve about the necessity of finding a place for the soul in both worlds. That the soul has desire and appetite only during its earthly life, and that it is the source of motion of the body show the pull in one direction; its immortality, spirituality, and preexistence shows the pull in the other direction. The dualisms of being and becoming, of soul and body, of reason and sense have undoubtedly a common root. The interesting question is the extent to which the sides of the dualisms were identified by Plato. Reason is certainly of the essence of the soul, and sense is primarily a bodily function. But to what extent is the soul like the Idea and the Idea like the soul? Are the Ideas spiritual so that the soul is one in essential nature with them? Probably the only answer one can make is that Plato's teaching tends to that result.

As was asserted before, the Platonic dualistic ideas were hardly expressive of the genius of the Greek race and cultural tradition, and Aristotle, in seeking to overcome them, is more nearly in harmony with that genius. Aristotle's teachings concerning the soul contain, if anything, more inconsistencies and waverings than those of Plato. But if the force of the latter makes for a rigid dualism, the cumulative effect of the former makes against it.

The dualism of the sensible and supersensible forms the common basis for the religious-philosophical movement of the post-Aristotelian, or Hellenic, and the patristic and medieval periods.⁹ It is in the much neglected Hellenic period that there arose a new spirit and new spiritual interests which transformed the culture received from the Greeks, suffused it with longings and hopes engendered by novel reactions to the circumstances of life. In the writer's belief, the transition at this time was a more profound change in human life and spirit than that which marks the transition from so-called medieval times to modernity. The elements that mark this great transmutation can not even be exhaustively enumerated in this paper. It is a point of the highest importance, first of all, that it was the teachings of Plato that were adjudged most in harmony with the tenor and

⁸ Cf. Rohde, *op. cit.*, Band 2, p. 263 *et seq.*

⁹ Cf. Windelband, *Geschichte der Philosophie*, Vol. 1, p. 166.

rhythm of life. The Platonic dualisms fitted human needs. The aspirations of men for salvation, for peace and freedom of spirit, for relief from the perplexities of existence; the search for a way of life affording security of soul and a guarantee of its abiding value and assurance of eternal conservation of these values and of the soul; a more vivid sensing of the evils of existence and a heightened appreciation of life's dissonances: all these formed a rich soil in which the Platonic teachings might be planted. Those currents of thought and feeling which had never been able to muddy the clear stream of Greek reflection so long as Greek life was maintained in the setting of the city-state now found a more congenial environment. However dissonant with classic Greek life, these preachings were assonant in the world empire and culture of Hellenic times. A general dislocation of values occurred: good and evil, perfection and imperfection, beauty and ugliness, were no longer characteristic of existence and life, but were divided up between two worlds and two lives. Good, perfection, and beauty were in another world and life, and the little of them that this life and world disclosed were but adumbrations of the genuine, original values in a real, supersensible, and supernal world and life. In such a matrix of thought and feeling the consciousness of sin, imperfection, impurity, coupled with a despair of human powers, rendered imperative an appeal to a divine agency for cleansing, forgiveness, spiritual support, and final salvation. One might point out as an exception the stoic belief in the rationality of existence and the trustworthiness of reason as a guide in life. But stoicism really forms no exception. For it is just because the stoic is haunted by doubts of these things and is sensitive to the manifold facts and experiences that threaten his beliefs that he so stubbornly upholds them and is ever in search of defenses for his position. This in itself illustrates the change from classic Greek life and thought. Even the stoic finds man self-sufficient only because man participates in a world-reason.

The Platonic contrast of the sensible and supersensible, of body and soul, and reason and sense naturally received modifications when assimilated by this growing spirit. The point remains, however, that this philosophy was more or less congenial to the new situation; and of course this new situation was itself in some degree defined by the Platonic philosophy. The Platonic dualisms, the stoic contrast between the rational and irrational, and the widespread tendency in the period after Aristotle to make a sharp differentiation in the ethical life between the inward life of consciousness and spirit and the outward sensible world all represent forces that tended to sun-

der more and more the soul from body, this world from that beyond, and aspiration from accomplishment. The ethics of moderation, prudence, and harmony of life was supplanted by the ethics of salvation. The dualism of God and the world which so vitally concerned Alexandrian philosophy pairs off with the other dualisms, and the religious contrast between the flesh and the spirit influenced and was influenced by all these movements. In the long run, matter, the irrational, the sensible, evil, desire, the world, the flesh, and the devil are grouped under the same emotional category; while the super-sensible, goodness, beauty, righteousness, spirit, the inner moral life, the rational, and salvation evoke similar passional attitudes. Matter consequently becomes tainted with evil, a thing very different from the imperfection characterizing it in separation from form, in Aristotelean terms.

Classic Greek philosophy had fathered a triplicate division of the total nature of man in spirit, soul, and body. The triple alliance was an unstable thing. Spirit as the very essence of rationality, as intuitive reason, has readily ascribed to it immateriality and separability from body. But the soul had connections with the body from which it could not so readily be freed. As the form of the body, and as having resident within it functions obviously physiological in character, it awkwardly mediates between the highest rational power and the body. This triple division was resolved into a twofold division under the influences of the ideas just described, especially under Platonic influence. However, where the Aristotelian tradition was dominant, an unequivocal dualism was hardly possible; the Aristotelian followers remained burdened with the master's inconsistencies.

No summary statement can do justice to the ideas and interests of the Hellenic period. It is clear, however, that the multitude of philosophies, religions, and *Welt Anschauungen*, were with a few exceptions akin in spirit. No further discussion is requisite to elucidate how these essentially religious and moral ideas, convictions, and dogmas must have converged upon the conception of the soul. Taken in the mass, they imply a certain transitoriness in the union of body and soul; the connection must be taken as adventitious and extrinsic. Under the spell of such assurances it was most convenient to regard the body as a temporary residence for the soul during an earthly sojourn of limited duration. Only the soul conceived as a principle aloof from the physical and corporeal could endure amidst the unceasing changes of this world. The soul was of transcendent importance, and the welfare of body in theory at least was subordinate to welfare of spirit. The soul had a destiny, the body merely a life. Credence in that destiny demanded such a conception of soul

as would conform to the exigencies of belief; the greater the dissimilarity of body and soul, the more separable the two, and the less dependent the one upon the other, accordingly, the easier it was to fit the soul into the general scheme of things. If the compresence of body and soul became mysterious in the degree that their substantial unlikeness was affirmed, this was counterbalanced by the fact that the greater the unlikeness, the more acceptable the idea to a world-view such as this. The ascription of sin to the body, and in general to the physical, reinforced the dualistic doctrine. Imperfection of soul, sin, evil, and limitation were correlatives of the bodily imprisonment of the spirit. The exaltation of the glorious destiny and value of the soul naturally accompanied the degradation of body and the relegation to it of all that would be prejudicial to the interests of the soul. Such constructions are consonant with the world-plan of creation and salvation.

From this point on the notion of immaterial substance and of soul as such a substance are conceptions not infrequently encountered. The Platonic tradition spreads abroad, but the platonizing philosophers could not evade the difficulties inherent in the notion, and various sorts of compromising tendencies appeared. Especially do we come across reversions to idea of soul as consisting of subtle matter; the attenuated gossamery character of this soul-stuff softening its materiality. In fact, it may be said that this thought is never outworn, and crops out again and again in later ages. It was not easy to maintain unsullied the soul's immateriality, and it took time to establish the thought. Thus Tertullian found no stringent distinction between soul and body; both were corporeal, but the former was qualified by its fineness. Gregory of Nyssa's doctrine of mind as distributed according to some inexplicable plan of blending through all parts of the body shows how difficult it was to extricate the soul from all bodily entanglements. Plotinus, and with his assistance, St. Augustine, manage the closest approximation to the position later held by Descartes. Soul is for the former still the principle of motion, but it is incorruptible, having neither bulk nor quantity. St. Augustine, taking the standpoint of immediate experience, makes the principle of self-consciousness all-important. The dualism of body and soul is strait-laced: man is made of two substances, and soul-substance is immaterial and spiritual. Recourse to immediate experience is all the more necessary because no knowledge of soul can be derived from the examination of the body.

This complex of philosophical and extra-philosophical thoughts, of beliefs ecclesiastically formulated or precipitated from the fluid mass of folk-tradition, and of passional attitudes provoking an ontological and anthropological dualism and satisfied by it, forms but one

component of the total movement. A second component is the ancient problem of the relation of universal and particular, of matter and form, around which clustered so much of scholastic meditation. The medieval "matter" is, of course, the "matter" of Aristotle, not the matter of the modern chemist. The atomic theory in some form or other persists, being revised with vigor during the Renaissance. But to whatever extent the scholastic philosophers used the atomism derived from Democritus to explain the constitution of matter, the notion of matter was primarily used in the Aristotelian sense. Matter was the individuating principle; things were matter and form, their individuality arising from the individuation of form through matter. The term thus referred to that which was thought to explain the particularities of the world, and was a logical requirement and a metaphysical principle.

Now we have tried to show in some detail how ethical, religious, and theological ideas and requisites led to the acceptance of the opposition of God and the world, of true and transcendent reality to the finite, and of body to soul, as congenial tenets. To this movement the Platonic philosophers were particularly acceptable because of the relative ease with which Platonic ideas could be utilized to give a rational substratum to the constructions of imagination winged by such visions. The inner spirit and meaning of the dualities cherished by the leaders of the movement are peculiar to it. Their source is ethical and religious. Now the Aristotelian contrast between matter and form is from its inception different in spirit and intention, and rises from other motives. Its roots are metaphysical and epistemological. We have, therefore, two sets of dualities or contrasts, not one. There is, on the one hand, the dualism of God and the world, and of soul and body, the fruits of worldly despair and other-worldly yearnings, reinforced by such philosophic movements whose character facilitated their adaptation to the purposes of edification, moralizing, and salvation. On the other hand there is the doctrine of matter and form, derived from Aristotle, with its distinctions between God as pure form and the composites of nature, and of matter and form as indissoluble constituents of things and of man in contrast with pure intuitive reason, which, unlike the remainder of the soul, was free of alliance with corporeality. Now the former standpoint makes for complete dualism; the logic of the latter operates in the contrary direction. But the two sets of ideas do not remain dissevered. Through certain of the scholastics the interweaving of them is deliberately attempted. The result is that the distinction between matter and form takes on more and more of the connotation of the ethico-religious dualisms. Thus in the course of time the notion of soul as form, and as immaterial and ideal in

that sense, receives also the connotations that the term possesses in the ethico-religious dualisms; therefore to the immateriality of soul as form is conjoined its immateriality as a spiritual, non-extended, substance or principle whose essence is thought. Likewise the ontological distinction between form and matter becomes impregnated with the purport and implications of a theological world conception.

The assimilation of these two currents of ideas does not come without a struggle. Aquinas seeks to resolve all points of opposition and to synthesize the sets of ideas. When Descartes, subject to the dictates of the new science of nature, advocates, partly as presupposition and partly as theoretical explanation, his dualism of substances, the two lines of thought have fused and the Cartesian doctrine is properly envisaged. In explanation and in illustration of the process we turn to scholasticism.

For orthodox scholasticism, utilizing Aristotle, cognition took place through the apprehension of form. Its common assumption was that like was known by like. The form realized and actualized in intra-organic corporeality (potentiality) corresponds to the form realized in extra-organic materiality or potentiality. The similarity guarantees the veracity of cognition. Even in sense-perception the form is apprehended without matter. Thought apprehends the corporeal not directly, but by means of the ideal or immaterial species.

Aquinas may be selected as sufficiently representative to serve as illustration. According to Aquinas, the intellect requires the operation of the sensitive powers for the production of the phantasms or forms, the *species impressae*,¹⁰ and it can understand only by the aid of the phantasms.¹¹ The intellect as passive is its potentiality with respect to intelligible things.¹² To abstract the universal form from the particularities of sense is to render them intelligible, and this is the intellect as active and as understanding.¹³ The individual and particular are apprehended through sense and imagination.¹⁴ "There are two operations in the sensitive part. One, in regard of impression only, and thus the operation of the senses takes place by the senses being impressed by the sensible. The other is formation, inasmuch as the imagination forms for itself an image of an absent thing. . . ."¹⁵ The phantasm or species received in sense can not directly impress the passive intellect, but the active intellect through the sensible species produces in the passive intellect the intelligible

¹⁰ *Summa Theologica*, translated by Fathers of the English Dominican Province, 1912, Part 1, 75, art. 3. All references are to this translation.

¹¹ *Ibid.*, 84, art. 7.

¹² *Ibid.*, 79, art. 2.

¹³ *Ibid.*, 79, art. 4.

¹⁴ *Ibid.*, 84, art. 7.

¹⁵ *Ibid.*, 85, art. 2.

species or form.¹⁶ Thus the intellect knows directly only the universal, the ideal form, but indirectly through the species it knows the singular.¹⁷ Knowledge of sense is thus prior to knowledge of intellect and complete knowing is the passage of intellect from a state of potentiality to a state of actuality.¹⁸ The likeness of the thing understood is the form of intellect in act; the likeness of sensible things is the form of sense in act.

Thus knowledge depends on a cognitive correspondence of the form arising in sense and then, by an abstracting process, arising in intellect, with the form of the object. Now it must be noted that *neither the sensible species nor the intelligible species are in themselves the object of knowledge*. They are the *means* of knowledge. "Therefore it must be said that the intelligible species is related to the intellect as that by which it understands . . . that by which the sight sees is the likeness of the visible thing; and the likeness of the thing understood, that is, the intelligible species, is the form by which the intellect understands."¹⁹ The cognizance of the means comes after cognizance of that known through the means. "But since the intellect reflects upon itself, by such reflection it understands both its own act of intelligence and the species by which it understands. Thus the intelligible species is that which is understood secondarily; but that which is primarily understood is the object, of which the species is the likeness."²⁰ It is noteworthy that the question which Aquinas propounds in the article from which these selections are drawn is as follows: "Whether the intelligible species abstracted from the phantasm is related to our intellect as that which is understood?"

It is clear that a duality is implicit in this doctrine. It is the *likeness* of the species as means to the object known which obscures the twofold character of the conditions of cognition. When this obscuration is dispelled, the duality appears, and therewith appear problems of later epistemology.

The above account of a typical scholastic position indicates the ideal or immaterial character of the essence which constitutes the species for thought. Now in Aquinas, as in other writers, the influence of the ethico-religious dualisms and their philosophical elucidations is commingled with the Aristotelian distinction between matter and form. And so in Aquinas we find that that which possesses the immateriality and ideality connoted by the concept of form acquires the tincture of immateriality connoted by the nature of a

¹⁶ *Ibid.*, 85, art. 1.

¹⁷ *Ibid.*, 86, art. 1; 75, art. 1.

¹⁸ *Ibid.*, 85, art. 3.

¹⁹ *Ibid.*, 85, art. 2.

²⁰ *Ibid.*, 85, art. 2.

substantial spiritual principle of which thought is the primary power and chiefly expressive of its inmost nature. The more insistent the demand for a clean-cut, sweeping division of existence into spirit-substance and matter-substance, the greater the impediment to the maintaining of that continuity inseparably connected with matter conceived as potentiality and form as the realization of that potentiality.

The doctrine of Aquinas affords illustrations of this; the expected discrepancies are discoverable. His thought concerning the soul and its relation to the body reveal the conflict between tendencies.

First: The soul is "the first principle of life, not a body, but the act of a body."²¹ It is the form of the body; it contains no matter.²² But again, the soul is called the principle of intellectual operation, and is incorporeal;²³ with this must be correlated the assertion that the "intellect which is the principle of intellectual operation is the form of the human body."²⁴ Now Aquinas specifically says that "in man the sensitive soul, the intellectual soul, and the nutritive soul are numerically one."²⁵ These excerpts indicate that Aquinas feels the stress resulting from maintaining the unity of the soul while at the same time asserting the difference between the intellectual power and the other powers. This is, of course, derived from Aristotle's more or less outspoken divorce of pure reason from the soul as part of the form-body composite. The difference between the intellectual soul and the other powers would seem to be, on the one hand, a difference of degree; but on the other hand, Aquinas evidently feels that there is a radical difference in kind. The problem is elided by regarding the sensitive and nutritional souls as being contained virtually in the intellectual soul.

Second: The intellect has "an operation of its own apart from body,"²⁶ but all other powers of the soul, as sense and imagination, require the operation of an organ of the body, or at least have no operation apart from the body. "The intellectual soul itself is an absolute form, and not something composed of matter and form . . . the intellectual soul, and every intellectual substance which has knowledge of forms absolutely, is exempt from composition of matter and form."²⁷ The ability of the intellectual soul to know universals depends upon this freedom from composition, as the context shows;

²¹ *Ibid.*, 75, art. 1.

²² *Ibid.*, art. 5.

²³ *Ibid.*, art. 2.

²⁴ *Ibid.*, 76, art. 1.

²⁵ *Ibid.*, 76, art. 3.

²⁶ *Ibid.*, 75, art. 2.

²⁷ *Ibid.*, 75, art. 5.

and the limitation of the sensitive powers to the individual is the result of their dependence upon a bodily organ. Thus the function of the intellectual power necessitates its freedom from corporeality; but this runs counter to the unity of the soul and the organic conception of the human being and the process of knowledge.

Third: The intellectual soul is incorruptible, but not so the sensitive and nutritive souls.²⁸ Intellect and will are powers of the soul as their subject; the powers of the sensitive and nutritive parts are subjected in the composite, that is, are accidents of the totality,²⁹ and so remain only virtually in the intellectual soul after the dissipation of the composite. While the intellectual soul depends in this life upon the operation of sensitive powers for knowledge, in the after-life it will know in some other way. The immortality of the sensitive and nutritive powers, despite the unity of the soul, is a sort of immortality by proxy. Aquinas's meaning seems to be that the intellectual soul as a sort of fulfilment of the powers of the other parts of the soul, their completer realization, gives these powers the benefit of its own immortality. At any rate, the conflict between the unity of the soul and the disparateness of function and character of the various powers is manifest.

Fourth: Despite its independence of corporeal organs, the intellectual soul requires the operation of the sensitive powers in knowing. The ideality of form bridges the apparent gap between the pure incorporeality of intellect and the material entanglements of other powers. But in the face of the various distinctions between powers, it is hard to maintain that form, as form, is equally ideal and immaterial wherever it occurs.

Now let us consider whether we can discern traces of the influence of those dualisms nourished by the ethico-religious movement on the Aristotelian conceptions which Aquinas utilizes. First we note that Aquinas rejects the notion that corporeal and spiritual beings consist of one and the same kind of matter.³⁰ This seemingly implies that there are two kinds of stuff of which things are composed. At least the statement involves something more than the distinction between matter and form. The thought of two kinds of stuff, of substances, dictates the denial. This is substantiated by considering it in connection with two other points, first, the distinction between kinds of creatures, and second, the two uses of the term substance. Three kinds of creatures are enumerated by Aquinas: first, the purely spiritual (*e. g.*, angels); second, the wholly corporeal (inanimate and animate things, excluding human beings?); third, the composite

²⁸ *Ibid.*, 77, art. 5.

²⁹ *Ibid.*, 77, art. 5.

³⁰ *Ibid.*, 50, art. 2.

creature, corporeal and spiritual, which is man.³¹ But if the terms spirit, spiritual, and spiritual substance, as used here refer merely to the ideality of form, there are no wholly corporeal creatures, for all individual things of nature are composites of matter and form. That is, if all that Aquinas has in mind is the matter-form distinction, on this basis there should be only two kinds of creatures: the purely immaterial beings (creatures of form, without matter), and composites of form and matter, including all things animate and inanimate. On the other hand, since Aquinas does distinguish three kinds of creatures, only one of which is composite, wholly corporeal creatures must be creatures of one kind of stuff, and purely spiritual creatures must be creatures of another kind of stuff, man alone being composed of both kinds. There are two possibilities of interpretation: we can identify form with spiritual substance or we can admit that Aquinas's distinctions here are based on a dualistic view that runs counter to the matter-form scheme which he generally adopts. If we assume the first possibility, and identify form and spiritual substance, it follows that the class of men alone possesses form, and all finite things excepting man are simply matter without any form at all, for Aquinas calls man the composite creature. But all finite particular things are composed of matter and form, so this identification seems impossible. This means that we can not reconcile these inconsistencies, but must regard them as springing from a conflict between dualistic ideas and the Aristotelian conceptions. If we accept Aquinas's enumeration of three kinds of creatures, and connect it with the statement that man is composed of a spiritual and corporeal substance, the result must be formulated somewhat in this way: corporeal creatures are unities of matter and form having an ideal aspect in so far as they are forms, but the stuff of which they consist is matter-substance, a substance unlike spiritual substance. Corporeal creatures, in a word, are matter and form, but not spiritual. Angels, however, may be regarded as pure form, and at the same time composed of spiritual substance. But man, the composite, as a particular existing thing is a unity of matter and form, but unlike all other finite things, has super-added a substantial spirit. Man, that is, is matter, form, and spiritual substance.

This is an impossible result, of course; but if we try to interpret the division of creatures according to both principles, we must reach some such hybrid classification. The confusion follows from Aquinas's inability to identify the distinction between matter and form with the distinction between two substances; yet he must find a place for both in his philosophy.

³¹ *Ibid.*, 50, introduction; cf. 75, introduction, where man is said to be composed of a spiritual and corporeal substance.

Consonant with this is the distinction between spiritual form and corporeal form which is implied in at least one place.³² But on the contrary, Aquinas explicitly repudiates the concept of the mediating *forma corporeitatis*. Turning now to the term substance, we are given two meanings: "In one sense it means the *quiddity* of a thing signified by its definition . . . to which we apply the term *essence*. In another sense substance means a subject or *suppositum*, which subsists in the genus of substance. . . . It is also named by three names signifying a reality—that is, a *natural thing* (*res naturæ*), *subsistence*, and *hypostasis*."³³ Substance means, therefore, the essences, the "principle of the species," which is individuated by matter, and also a concrete individual thing. This contains no implications of spiritual substance. A stone is a substance, a thing composed of matter and form, according to the second meaning. But according to the division of creatures, the stone is wholly corporeal. Man, too, is composed of matter and form, but he contains something over and above these elements, for he is a rational and spiritual substance as well as a corporeal substance. His definition, therefore, contains something over and above that which is contained in the definition of any other earthly creature, although they are substances, composites of matter and form. The rational power of man differentiates him from all animals. We have, accordingly, this dilemma: either the soul of man (his form) is a duality, one part of which is spiritual in a sense of the term not implied by the notion of form as such, and, therefore, he is composite as compared with the class of wholly corporeal things; or the form or essence of man differs from that of other mundane things only in degree, and then there is no reason why man should be classed separately as a composite creature, made of two substances, while all other things are not. That is, either the spirit-substance constituent of man is radically unlike form in general, or he is no more and no less composite than any other creature composed of matter and form. This is reminiscent of Aristotle's troubles with the conception of the rational soul as pure form, but it is something more. The temptation towards an unreserved dualistic conception, coupled with the Aristotelian problem, incessantly threatens Aquinas's advocacy of the unity of the soul, the continuity of powers, and the hierarchical continuity of the totality of things. The rational power of man, his capacity for knowledge of universals whose archetypes are the ideas of God, the intellect's transcendence of spatial and temporal conditions—it is this that is man's divine afflatus, that relates him to the other world, and that raises him above the level of natural things to align him with angelic beings. The

³² *Ibid.*, 50, art. 2.

³³ *Ibid.*, 29, art. 2.

graded hierarchy of forms, the inanimate thing, the animate, man, angels, and finally the deity, is cut transversely by a dualistically conceived distinction between the spiritual and material. The point at which this series of substances is traversed by the other conception is the never thoroughly bridged gap between the animal-like powers of man and the power of intellect. As we shall see, this bisection necessitates a readjustment of every element of the series.

In short, form as form can not be the same wherever it occurs. Either the form of man contains that which contrasts it with the general immateriality of form, or in addition to the body-form there is another sort of form partaking of a different nature. Aquinas can not openly equate form and spirit: and he can not avoid doing it surreptitiously. It is the play on the terms substance, form, and matter that smoothes over many awkward situations. Substance at one moment implies that potentiality which is called matter in the matter-form distinction; at another it secretly implies a kind of matter wholly different from corporeality. Again, substance as essence (pure form) has no kind of matter at all; yet there exists immaterial intellectual substances which consist of some stuff—they are spiritual substances. Forms, as essences, are susceptible of hierarchical arrangement based on logical distinctions (accidental and substantial, adherent and separate), with those archetypal forms, the ideas of God, at the summit. But forms are also arranged on a basis of ethico-religious valuation, and this introduces the concept of spirituality and prejudices the relation of form to matter as that of realization to potentiality. To the extent that the spiritual receives its definition from the spirit-matter antithesis, to that extent matter can have no conceivable relation to form, and to that extent matter and form are logically opposed conceptions, and not complementaries.

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(*To be continued.*)

REVIEWS AND ABSTRACTS OF LITERATURE

Acquisition of Skill. WILLIAM HOWARD BATSON. Psychological Review Monograph Supplement, Vol. 21, 1916.

The author, from a review of the literature on the acquisition of skill, raises questions on the following points: the influence of objective and subjective factors on different types of learning and on the same type of learning at different stages of development, the daily fluctuation in the curve, the effect of short and long periods of rest,

and plateaus. He seeks to get more information in answer to these questions, and to gain such information on the other points pertaining to learning, as the data will afford.

The first experiment consists of ball tossing by four subjects, extending over several months, on which complete data are given. The elements in the ball tossing are the next subject of investigation. (1) The judgment of direction: measured by rolling a steel ball on a smooth board with arrangements for scoring in terms of deviation from the target. (2) The judgment of force: measured by a similar device, the scoring being done in distance units, separating the target from the place the thrown ball falls. (3) The problem of the judgment of time: measured by having the subject learn to release BB shot from a pocket at the proper time for the shot to run down a trough and fall into a series of pockets on a vertical wheel revolving at the rate of 46 times per minute. Tabulated data, curves, and ample explanatory discussion of the same are given.

The ball-tossing experiment is one in which attention to the main phases of the problem must be simultaneous. The author introduced a complex problem, containing, in the main, the chief phases of the ball-tossing problem in the learning of which each element can be attended to singly until mastered and the whole problem integrated. The subject (using a pair of tongs), picked shot from eight small pockets on a disk rotating at a speed of eleven times per minute, and threw the shot into a small bag held in a closed frame about 23 inches to the right of the subject, about eight inches above the level of the table on which the disk was placed. The picking up, the distance judging, the time process, and the motor coordination of each separate process were attended to separately by at least some of the subjects, as is apparent from the analysis.

The conclusions may be summarized briefly thus: the plateaus of learning depend upon factors involved in the process to be learned and are restricted to problems of complex nature; objective and subjective conditions determine daily fluctuations; the general curve of learning depends upon both the problem and the attention of the subject; simple problems have a typical learning curve and complex problems may have a typical curve; there is a slight evidence of the warming-up process; the short rest periods have little or no effect on the work; after a long rest period the subject is found to be in a condition to improve rapidly and in some cases the subjects showed they had really gained power during the rest.

The author has presented in a very clear-cut manner his problem data, analyses, and curves, with ample discussion, and seems to have realized the aims he professed in starting the investigation. The

monograph will be of interest and value to those at all concerned with the general question of learning and particularly to those who are studying the question of development of skill. A brief but well-chosen bibliography is given.

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Two Studies in Mental Tests. CARL C. BRIGHAM. Princeton. Psychological Monographs, No. 1, 1917. Pp. 254.

I. *Variable Factors in the Binet Tests.*—This study reports results obtained by giving Goddard's 1911 revision of the Binet-Simon scale to 422 children below the seventh grade in the Princeton, New Jersey, Model School. It seeks to determine the influence of the personal equation of the examiners who gave the tests, the influence of grade training and sex differences, and the correlations of the individual tests with age. The four examiners had been trained in methods of psychological experimentation. Three of them studied the tests together and discussed their results at the close of the day's work in order to facilitate the acquisition of uniform methods. Regardless of these precautions, it was shown that one of the experimenters was unmistakably in error on some of the tests, scoring the girls more leniently than the boys. For the correlations, only such tests were used as were shown to be free from the personal equation of the examiners.

The correlations of the individual tests with grade were found to be higher than with age. This fact was taken as indirect evidence of the value of the tests as measures of intelligence. Some tests showed the effect of school training. No demonstrable differences between the sexes were shown, the cases of apparent difference being confused with age and with grade training. Dr. Brigham suggests that investigators who are to use the results for the standardization of age norms should use the complete method of experimentation, *i. e.*, of giving all tests to all children tested. Also, he says that the results should be so grouped as to show the absence or presence of grade training and sex differences.

II. *Diagnostic Value of Some Mental Tests.*—The purpose of this study was to determine the value of individual tests when used for the purpose of separating groups of different intelligence. Selected tests from Town's and Goddard's translations of Binet's 1911 scale and ten sets of supplementary tests as nearly independent as possible of language ability were used. One experimenter, Dr. Brigham, gave the tests to two groups of children in the schools of Trenton, New Jersey. One group was composed of normal children

in the upper grades, and the other was composed of approximately 200 children in the special classes. The diagnostic value of the tests was the difference in the percentages of the two groups passing the tests. Some tests with high diagnostic value were: Subtraction tests, 74 per cent.; comprehending difficult questions, 71 per cent.; reconstructing dissected sentences, 71 per cent.; and Healy cross-line tests, 64 per cent. Two of low value were: Interpreting pictures, 6 per cent., and describing pictures, — 2 per cent. The results of this experiment were compared with those of similar investigations. Some suggestions for future work with tests are given. Both studies show versatility in grouping results for bringing out the effects of different factors.

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Studies in Animal Behavior. S. J. HOLMES. Boston: Richard Badger. 1916. Pp. 266.

Professor Holmes has brought together the results of numerous studies. The essays are distinct, but together give a fairly connected account of our knowledge of animal behavior. The topics range from "The Instinct of Parental Care" to "The Mind of a Monkey," with accounts of such special subjects as tropisms, the death-feigning instinct, and recognition of sex.

Of particular interest to the psychologist and philosopher is his attitude to the continuity of evolution in behavior. In this he tends to retain the distinction made by Loeb between the simpler and higher forms. The lowest animals are explained by tropisms modified by special conditions while the higher require the assumption of association and the presence of ideas. He admits that earlier influences modify the responses of the simplest organisms, but insists that this is entirely different in its mechanism from the learning of the higher animals. How they are distinguished he does not say, but he says there is no sign of real learning in the protozoa. One may well question whether Holmes would find it easy to formulate in objective terms what the difference is, and a reference to the presence of ideas or even to the presence of a nervous system in one case and not in the other does not seem to be wholly sufficient.

In discussing the relation of pleasantness and unpleasantness to the learning process, Holmes criticizes Thorndike's explanation in terms of the behavior of neurones on the assumption that permeability of the synapses would depend in the last analysis upon the intensity of stimuli and that intensity and pleasantness are not closely correlated. Rather is pleasure correlated with quality or with the

activity of certain neurones or paths. Holmes favors a modification of the Hobhouse theory, asserts that repetition of pleasant acts depends upon the mutual reinforcement of congruous responses, and the mutual inhibition of incongruous. The pecking at unpleasant caterpillars by the chick is inhibited and so not learned because the sight-pecking reflex and the unpleasant-rejecting impulse mutually nullify each other, while the sight-pecking and pleasant-swallowing reflex reinforce each other. Whatever the final outcome, this view enables one to avoid treating feeling as a causal force and at least suggests a possible mechanism or physiological analogy for feeling that might be effective in learning.

In the same connection one may also mention Holmes's contention in the chapter on trial and error that this form of learning also presupposes a capacity for selection, an ability to know the right response when it appears, and this must be regarded as an instinct whether it be due to the presence of pleasure or to the congruity of responses. It can not be a property of unmodified protoplasm.

The more biological chapters on the influence of behavior on form and the behavior of cells are also to be recommended to the general student as non-technical summaries of much interesting work that is not readily available elsewhere.

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JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE, October, 1917. *La logique phénoménale* (pp. 297-324): P. DUPONT.—The postulates and principles of logic do not possess the certainty that characterizes the immediately given; they are not given by a rational intuition, although they arise in experience and are confirmed by reflection on experience and induction. *Le rôle des tendances affectives dans l'attention et dans la conscience* (pp. 325-344): E. RIGNANO.—Every state of attention is formed by an affective contrast which arises because an affective process called forth through a distance receptor arouses an antagonistic affective process. No psychical state is in itself either conscious or unconscious; it becomes one or the other by its connection with some other psychical state. Consciousness is not an intrinsic property of psychical states, but is extrinsic and relative to them. *L'acte symbolique* (pp. 345-361): EMILE BRÉHIER.—Symbolism presents two aspects: on the one hand, symbolism passes from act to intention, disengaging exterior conditions in order that we may constitute an interior life; on the other hand, there is a sym-

bolism which passes from intention to act and thereby tends to expand our interior dispositions in the infinity of space and time. *Revue critique*. Charles A. Mercier, *On Causation, with a Chapter on Belief*: ANDRÉ LALANDE. *Analyses et Comptes rendus*. E. P. Lamanna, *L'Amoralismo politico.—Il Fondamento Morale della Politico secondo Kant*: J. SÉGOND. Joseph de Marliave, *Études Musicales*: LIONEL DAURIAC. *Revue des Périodiques*.

Perry, Horace. *Theories of Energy*. New York: G. P. Putnam's Sons. 1918. Pp. v + 231. \$1.75.

Woodworth, Robert Sessions. *Dynamic Psychology*. New York: Columbia University Press. 1918. Pp. 210. \$1.50.

Marchesini, G. *Problemi morali, per le scuole normali (con 90 esercizi)* Rome: Athenaeum. 1917.

Moffa, Francesco. *Il trattato teologico-politico di Spinoza*. Naples: La Tipografica.

Bissolati, Stefano. *Delle Istituzioni Pirroniane. Libri tre di Sesto Empirico tradotti per la prima volta in italiano da Stefano Bissolati*. 2a ediz. a cura di G. Rensi. Firenze: Le Monnier. 1917.

Mackenzie, J. S. *Elements of Constructive Philosophy*. New York: The Macmillan Company. 1917. Pp. 487.

NOTES AND NEWS

THE Council of the Southern Society for Philosophy and Psychology has decided, on account of the general situation and of the number of members of the Society who are engaged in various forms of national service, to abandon the annual meeting scheduled to be held at Peabody College, Nashville, this spring.

M. JULES LACHELIER, the author of *Fondement de l'induction* and of many essays on formal logic, psychology and metaphysics, died on the twenty-eighth of January at Fontainebleau, where he was born in 1832.

ERRATA: on page 172 of the preceding number of the JOURNAL OF PHILOSOPHY the fourth and fifth lines should be read as following line sixteen of the present arrangement. Line six should follow line three.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

DUALISM AND EARLY MODERN PHILOSOPHY. II

THIS lengthy excursus into Thomistic doctrine was for the purpose of giving full exemplification of the interweaving of the influences whose history is being sketched. For the remainder of the paper there remains only the description of certain larger transformations. First of all it is necessary to consider a new set of ideas that begin to work in the scholastic scheme and force the precipitation therefrom of an unambiguous dualism. This set of ideas is that which defines and inspires the new sciences of nature.

The scientific movement removed forms and species from nature—this was its first step, for the exclusion of qualitative determinations from nature was the necessary preliminary to the revelation of nature as a mechanical material system. The term matter, which for centuries had possessed in the main its Aristotelian meanings, receives now a new set of implications. The positive side of the process has many aspects: The revival of atomism, and the development of the corpuscular theory; the revival of ancient skepticism, which prejudices the magisterial rights of metaphysics and theology over nature, and, assisted by nominalism, encourages the empirical tendency and heartens experimental inquiry; and in general the individualistic spirit gave spontaneity and independence to thought. The influence of mathematics was enormous. Quantity had been only an accident of things, since it was variable with respect to the individualized forms; it now became the chief feature of matter, its very essence. As soon as matter is stripped of forms, it appears as a realm free for mathematical exploitation. The more successful the application of mathematics to matter, the more definite became the new meanings and implications of the term matter, the more completely was it released from its Aristotelian connotations, and the more objectionable became the older notions concerning inner forms and occult qualities. Nature is revealed as a mechanical system, and mechanics becomes the mathematical theory of nature.

What effect did these changes have upon the dualistic conceptions of tradition? Evidently a sharpening and accentuation of the dual-

istic ideas must occur, with profound effects upon psychological and epistemological theory.

Substances had been things, qualitatively distinct, hierarchically arranged, the series ranging from the actual things of the perceptual world, inanimate and animate things, through persons and angels to God. We have seen that conceptual instruments bequeathed by Aristotle had not sufficed to devise a psychology, or ontology, or theology without points of cleavage and instances of discontinuity. Ideas springing from the emotional attitudes that characterized the growing world-outlook of the period after Aristotle conflicted with the proper utilization of the peripatetic concepts, or suffused them with alien meanings. The serially ordered system of substances always tended to split in two, the point of weakness being the rational human soul. Now when nature comes to be conceived mechanically, and matter becomes quantitatively defined, forms are excluded from nature and matter. Nature thus became one substance, in place of being many. Form and matter are completely separated. But the concept of form had received more and more the quality of spirituality. The hierarchical order, already weakened, collapses under the impact of the new conception of nature. If nature becomes one substance, so the whole system of forms must come to form one substance. The distinction between spiritual and corporeal substances was already at hand. Corporeality now means materiality, with no reference to form whatever. There is but one refuge for forms, namely, as modes or aspects of spiritual substance. There had always existed a certain kinship, psychologically, ethically, and theologically, between the immortal rational principle in man and the nature of angels and God. It was easy to group these together as partaking of the same substantial nature; they were incorruptible, they were immaterial (form), they were spiritual, and thinking was their peculiar power and act. The way was plain; all were spiritual in substance. The ontological dualism must follow. The concepts of form, of the extra-corporeal status of reason, and of spiritual creature had become the vehicles for the establishment of religious values; the retirement upon the concept of spiritual substance, defined as the antithesis of matter, as the basis of these ideas, preserved these values from annihilation by assuring escape from mechanics and its category of quantity.

As the tendency to envisage the world of nature as a system resting upon mechanical principles grew stronger, accordingly, thinking things no longer form the apex of the qualitative ladder of actualities, energies, and realizations. They became substantially homogeneous. The concept of substance is retained, but its older common-sense context which gave it significance was removed. In place of the

former arrangement we have the extreme contrast of thought to things, with nature as the object of knowledge. Now with this concentration of a graded plurality of substances into the antithetical two there occurs a change in the leading categories. As nature, stripped bare of its masque of secondary and tertiary qualities, was progressively revealed as a machine, obeying inviolable laws capable of mathematical formulation, the irrelevance of formal and final causes is emphasized.* This does not involve the complete disuse of formal and final causes, but only their inapplicability to nature. They are relegated to metaphysics. Mechanism and teleology are discerned as conflicting planes of interpretation and the conflict yields its full quota of problems.

The place of formal and final causes is taken by efficient causes, motion, impact, and the like. The older regulating conceptions, potentiality and actuality, were laid aside by the new science. Quantitative determinations become all-important. Furthermore, the interaction between substances, generally taken for granted whether explicable or not, persists in the new setting, and mind and matter are supposed to interact. Just how this took place was, perhaps, regarded as more or less of a mystery. Its mysteriousness did not constitute a problem until other issues connected with the dualism were made explicit.

This transformation inevitably wrought a change in epistemology and psychology, bringing forth new problems or momentous alterations in old ones. The matter can be given a general outline in the following way:

In terms of the orthodox scholastic conceptions, mind, and therefore knowing and knowledge, are the final realization of matter. Beneath the profusion of scholastic distinctions and verbiage this was the basic thought. Now with the surrender of the hierarchical ordering regulated by the concepts of potentiality and actuality, the sphere of existence is divided into two substances. The genuineness of knowledge of things had rested upon the correspondence of the species of thought to the generic forms of things. Perhaps a satisfactory explanation of this was not given; in one sense no explanation was needed just because knowing was the realization of the potentialities of matter. At any rate, with the telescoping of all substances into two, the correspondence or copy theory of knowledge persists. The knowing went on in an immaterial knower, intellect being pure form, and its means of knowing possessed the ideality of form. Now so long as the matter-form-potentiality-actuality scheme was maintained, the immateriality of knower and the knower's means of knowledge presented no obstacle. But when the knowing takes place in a spiritual substance unqualifiedly antithetical to the sub-

stance and nature of the things known, and the veracity of alleged knowledge is supposed to be tested by the correspondence of the mode of one substance to that of the other, the knowledge problem is set in dualistic terms; and the immateriality of the knower and correspondence as the test give birth to problems. Forms had been expelled from nature: the only "forms" remaining were geometrical, the configurations of bodies or extended substance. The *old* forms are all in the spiritual substance, and the term *idea*, hitherto mainly confined to denote that which the deity understands, comes to be applied to them. The possession of form by everything had hitherto provided a bond of kinship guaranteeing continuity between natural things and the knowing soul. But while formerly everything was both matter and form, now nothing is, or can be, both. The rupture is complete. If the old terms are to be used again, they must be provided with new meanings. In that case the ancient "matter" means *form as geometrical*, that is, configurations in extension, and these are the object of knowledge. Descartes's statement that "the infinitude of figures suffices to express all the differences in sensible things" expresses this.¹

On this basis the question of the nature of the correspondence required for knowledge becomes acute. What sort of correspondence exists between a mode of spiritual substance, which is that which cognizes, and a mode of extended substance, which is that which is cognized? In its orthodox connection the correspondence was based on the maxim that like is known by like. But this maxim is gone beyond redemption when the knowledge problem is set in dualistic terms (however long it might take for this to be recognized), for by definition there is no resemblance whatever between the modes of the two substances. In time the correspondence is changed to a correlation, but the inherent difficulties remain.

Laying aside the epistemological aspect of the situation, let us consider the status of psychology. The orthodox scholastic psychology was hardly troubled by the differences between body and the rational soul. In one sense there had been no problem of the relation of body and soul, for everything necessarily possessed both matter and form. To inquire how a material thing could be animated by an immaterial form would have been a senseless question to the peripatetic scholastic—it was unthinkable that a living material body, or any body whatever, should be without form. That the soul, as a separate and separable form, should be united to a perishable body was just what was demanded by the teleological constitution of the world. But when the ontological dualism forces a mind-body dualism, the relation of body and soul was something of which psychology

¹ Rule 12 of the *Rules for the Direction of the Mind*.

must take account. And especially is this true when advance is made in physiological knowledge. The contrast between the rational soul and the other powers was never satisfactorily dealt with; the doctrine made the mind-body dualism all the more acceptable.

The intellectualistic psychology, such as that of St. Thomas, had become the orthodox doctrine. But before it attained this position, a psychology of a different type had been cultivated. The Thomistic type flowed from the use of Aristotelian writings. But before the days of Aristotle's ascendancy the regnant influence was that of St. Augustine. The dominant psychology was based on St. Augustine's thorough dualism of body and soul, and inner experience, the inner life of the self-conscious individual, was the leading principle.² This Augustinian movement united with the empirical tendency of nominalism, and a psychology of introspective analysis was developed. But with the ascendancy of Aristotle, the gap between body and soul was apparently closed or veiled, and psychology was based on the peripatetic metaphysics. Perhaps it is not too much to say that it required the impact of the new movements in the sciences to re-open the gap for the reinstatement of the Augustinian position. But after all, the speciousness of the psychology worked out in Aristotelian terms did not wholly obscure the opposition of soul and body and various attempts were made to lend greater continuity by the interpolation of a *forma corporeitatis* (*spiritus physicus*), as a mediator between the pure form of the soul and the body. This insertion, repudiated by Aquinas, is urged by Duns Scotus. William of Occam follows Scotus in this.

As the two-substance theory became firmly entrenched, its effects were made manifest particularly in the theory of perception and imagination. The whole question of the nature and status of sense-qualities was forced to a revision.

This revision of the question is found even among the materialists. The materialistic conception of the soul, which Guizot somewhere asserts to have been the dominant idea in the first centuries of our era, was revised during Renaissance times along with the resurgence of the atomism of Democritus and Lucretius. The materialistic conception of the soul and the atomic theory had never wholly slipped from the attention of thinkers. The new interest in nature, however, caused these ideas to be congenial to some spirits. Thus to Telesius the soul was simply matter in its finest and most mobile state. The materialistic teaching was frequently disguised, for reasons prudential and sometimes perhaps sincerely religious, by the addition of an immortal and incorporeal soul. This *forma superaddita*, however, though advanced by such men as Telesius, Cardanus, and

² Cf. Windelband, *Geschichte der Philosophie*, par. 24.

Paracelsus, is not permitted to affect their psychology. It is in flagrant contradiction to the general tenor of their teaching, and in effect their psychology remains materialistic. The situation was glossed over by the conception of twofold truth. The materialists performed the service of renewing interest in physiological studies, and reviving the ancient notion of *pneuma*, made the theory of animal spirits the guide of physiology.³ The materialistic—and physiological—explanation of sense and imagination was formulated in terms of this principle; and even among the dualists, as for example, Descartes, the notion is utilized.

But outside the circle of the materialists, a different situation arises. The pageantry of qualities that had covered nature was torn away and there remained only its bony quantitative framework. The problem is: what is to be done with secondary and tertiary sense-qualities? Since there are two worlds, and they are excluded from one of the two, the obvious answer is that they are in the other. Everything that mechanics and mathematics do not discover in nature must be in the human soul-substance. And much of philosophy since that time has consisted of a series of desperate assaults with the purpose of driving them out again.

William of Occam illustrates the movement. To him and his school qualities are merely signs of objective differences in things. His criticism of the *species intentionales* insists that "cognition is not the intussusception of an image (*species*) resembling the thing known, but an immanent act (*actus intelligendi*) which becomes the sign of the thing. Hence the *species intentionales* whether sensible or intellectual, is a useless fiction which should be banished."⁴ Despite his addition of a *forma corporeitatis* and a sentient soul to the intellectual soul, the dualistic setting forces him to the subjectivity of qualities.

According to Windelband, the doctrine of the intellectuality of sense-qualities was a doctrine commanding many minds in Renaissance times. "Aus der skeptischen und der epikureischen Litteratur war die Lehre, dass Farben, Töne, Gerüche, Geschmäcke, Druck, Wärme, und Tastqualitäten nicht wirkliche Eigenschaften der Dinge, sondern nur Zeichen für solche im Geiste seien, unter Wiederholung der antiken Beispiele in die meisten Lehren der neueren Philosophie übergegangen. Vives, Montaigne, Sanchez, Campanella, waren darin einig."⁵ Further, "Galilei, Hobbes, Descartes erneuerten die demokritische Lehre, dass diesen qualitativen Differenzen der Wahrnehmung in natura rerum nur quantitativen Unter-

³ Cf. De Wulf, *History of Medieval Philosophy*, pp. 474-475.

⁴ De Wulf, *op. cit.*, p. 424.

⁵ *Geschichte der Philosophie*, par. 31.

schiede so entsprächen, dass jene die innere Vorstellungsweise für diese seien."⁶

The status of sense and imagination forms the crucial problem. If we revert for a moment to the scholastic epistemology, we find one reason for this. With the reduction of the plurality of substances to a duality, many of the ideas concerning knowledge that were accompaniments of the older world-view persevere in the new setting. There had been two types of knowing: the first, direct apprehension of the essence, of the immaterial pure form, and this was perception of the highest kind, and an expression of the intellect's native energy; second, cognition dependent on the correspondence of the species in the mind to the form of the object, such knowledge of things being mediated by the *species intentionales*. In the dualistic world construction these modes of knowing are unequally affected. When the intellectual soul (pure form) became spiritual substance the notion of immaterial essences perdures, but receiving the connotations implied by the position of essences in the two-substance scheme. These essences, therefore, retained kinship with the spiritual thinking substance. In short, the power of directly apprehending and comprehending immaterial essences, or fundamental truths and axioms, such as mathematical and logical entities, continued to be the noblest function of the soul, the purest manifestation of its puissance. In knowing immaterial things and essences, entities indigenous to the spiritual world, the mind can proceed upon its own initiative, for its intrinsic and defining power is thinking, and the essences are congeners of thinking as a spiritual energy and enterprise.⁷

The dualistic setting, therefore, does not radically transform the nature and conditions of knowledge of this higher type; or at least it does not accomplish it until a much later stage. Such knowledge had long been aloof from the tissue of material events, and the dualism of substances perpetuates the tradition. But the case with knowledge through sense and imagination was different. We have seen this manifested in the common position that qualities were only signs of differences in things, while those differences were matters susceptible of mathematical and geometrical determination. The status of sense and imagination had to change, because, in the first place, the aspect of immateriality possessed by natural objects in virtue of their form had vanished; the progressive liberation of the form from its individualizing matter as the form, so to speak, ascended through sense to intellect, was abolished. Secondly, on the dualistic basis, all cognition had to take place in the one spiritual

⁶ *Ibid.*

⁷ Descartes's *Rules for the Direction of the Mind* affords abundant illustrations of this position, as the writer hopes to show in a later paper.

substance, while the object of the cognition was by definition a phenomenon in a wholly different substance. Now the essence of material things, their universal traits, might be known by the direct intuition of thought, the unmediated grasp of the immaterial entity; in this way might the concept of extended substance, the concept of the circle, and the like, be secured. But all further knowledge must depend on the acquisition of some acquaintance with the particular extended object. Such acquisition involved contact, and this contact was furnished by sense and imagination.

In the noonday of scholastic thought, the hierarchial arrangement of substances satisfied manifold needs. It was an elaborate metaphysics, but it was also more. The logical concatenation coincided with the ethical and religious ordering of values and worths. The implicit ideal of metaphysics was a logical deductive arrangement of essences which should fulfil the demands of religious beliefs and ethical conceptions and furnish a world-construction that would cohere with a theological and teleological plan of the universe, of life and history. Now the rational soul could comprehend the essences in their logical ordering. The source of this power of the intellect was its own nature; the rational soul is ideal in nature, akin to the essence, itself an essence in the series. Its power of directly apprehending the essence was conditioned by the limitations of human nature, its frailty, impurity, and the circumstances of bodily life. Conceding the handicap of these limitations, nevertheless, the rational soul was endued with this native underived ability to grasp immaterial entities. Since this capacity pertains to the rational soul as of its inmost nature, no further explanation of this capacity is desirable. To be a rational soul is to possess this power. Further explanation could only be theological allegory.

But knowledge of transient particular things depended on conditions of space and time and the operation of bodily organs. Sense and imagination were instruments of the rational soul, in one sense indispensable for such knowledge. The manner in which the rational soul through such help attained the universal essence could hardly be regarded as satisfactorily explained. For, after all, the rational soul could have profited little by its instruments were it not for the powers germane to the intellect itself. That is, sense and imagination were primarily occasions for the exercise of this essential capacity; the capacity itself was the real reason why the intellectual species could be represented as in some way generated from the sensible species. Indeed, the intellect was given its instruments because its temporary conjunction with the body brought it under the sway of material conditions; after its separation from body, ac-

cordingly, it could dispense with sense and imagination as means of knowing.

The thoughts of the rational soul's native capacity for apprehending immediately the essences, and of its dependence on sense and imagination for knowledge of particular existents, persevere in various guises in later thought. Along with them persists the related distinction between truths of reason and knowledge of fact. Thus in Descartes and other writers phrases like the "light of nature" and the "inner light" express this fundamental endowment of the soul; the meaning of innate ideas should be sought in this connection. Hobbes's contrast of truly scientific knowledge as knowledge from cause to effect with knowledge of opinion as knowledge from effect to cause is rooted in a scholastic view of deduction. His failure to explain how the understanding came into possession of the entities from which it started its deductive process is an omission of the same nature as the scholastic inability to account cogently for the intellect's acquisition of the essence. Throughout modern times a certain degree of mystery has shrouded the mind's ability to possess general ideas and universals, *a priori* truths and axioms. Is not this, with the distinction between truths of reason and empirical generalizations, rooted in the common medieval system?

Now with a dualistic fashion of envisaging the knowledge problem superseding that founded on the old hierarchical system, the efficacy of sense and imagination as instruments becomes still more unsettled. The native power of the mind, as spiritual substance, to apprehend the essences needs explanation just as little and just as much as it did in the earlier system. The soul is a congener of the essence and for this reason no mediating agency between it and the essences is requisite. Much preliminary work in the shape of ridding the mind of prejudices, illusions, and errors that becloud the inner light might be necessary, but in so far as this inner light shines the essences could be grasped without the intervention of another agency. The theological motives are absent and purposes are changed, but the conviction that the soul possesses an inner power equal to the task is the same. In the end the appeal is to the nature of the rational soul itself.

On the dualistic basis knowledge of mutable things, as before, depends on some form of contact. The proof of the serviceableness of sense and imagination is, however, baffling. Then too, the applicability of the essences to things in nature is problematic. The difficulties that had been smoothed over by the snug gradations of the matter-form scheme are now blatant. For knowledge of the world of spirit and the realm of general notions and essences the underived intuitive power of the soul is ample. The enlightened

mind perceives the truth and knows that it knows. But what is to be said concerning knowledge of the world of matter?

Through sense and imagination the two worlds are to be connected. But are they equal to the task? Sense and imagination, in so far as they are cognitive, should be spiritual powers, resident in the soul; in so far, however, as they are concerned with material things, and are, or involve, physiological operations and possess bodily "seats," they must be corporeal. The situation makes for ambiguity, and a certain ambiguity in the treatment of phenomena of sense and imagination is widely characteristic of the early stages of modern epistemology, if not indeed of all stages.

Two qualifications we find introduced here and there to save the situation, in appearance at least: first, the assumption of an interaction of the two substances on the occasion of knowing; secondly, the limiting of cognitive power to understanding alone, leaving sense and imagination as instruments and means in dealing with material things, but possessing in themselves no cognitive power. This latter point is of course simply the continuation of the scholastic tradition; but it can not long be maintained as the consequences of the dualism of substances are recognized. With these qualifications the mind may be said to know spiritual things because, when things affect the senses, an image is produced in the soul, or an act of immediate apprehension of the image is occasioned. This is, to be sure, hardly more than disguising the problem. Just how the spiritual principle apprehends a corporeal image is still a mystery. There is little difference, seemingly, between the soul's directly apprehending an extra-organic object and its apprehending an intra-organic image, phantasm, or excitation of animal spirits. Or if the operation of the object upon the senses occasions the appearance of an image in the soul, the image, it would appear, must be either a spiritual phenomenon and accordingly completely removed from the corporeal, or else it must be material and physiological, and its presence in the spiritual substance a paradox.

The real root of the anomalous situation is that the copy-character of the sense-phenomenon (such as was possessed by the sensible species) no longer exists, while knowledge is still examined as if it still rested, and could rest, upon the principle of correspondence which has been validated by the assumption of that copy-character. When potentiality and realization were the ruling conceptions (secondary and tertiary) qualities were assumed to be properties of the extra-organic object and the species of sense replicas thereof. But with the transference of qualities to the soul, or even to the organism, whatever other implications the transfer might, or might not,

have had for knowledge, the sense-phenomenon was certainly no longer a copy, or replica or reproduction of properties of the object. The demand for correspondence persisting, despite the change, sense and imagination must vibrate between two substances in order that theory might be accommodated both to the new notion of qualities and the old notion of the criterion for determining the veracity of cognition. One may perhaps be permitted to formulate the trouble dilemmatically: if that which occurs in sense-experience is a copy of the material extra-organic object, it is material, and there is no way of explaining how a spiritual cognitive principle can even use it as a means; or, if that which occurs in sense-experience is a spiritual event, the principle that like is known by like, is inapplicable and the veracity of alleged cognition can not be guaranteed by the test of correspondence.

Within the limits of this paper we can not illustrate these contentions by showing their appearance in the works of individuals, nor expound the various ways and degrees in which they were severally affected by the movements that have been described. The purpose of the foregoing fragmentary sketch is not to explain exhaustively the history of all tendencies of thought which defined the environs of modern philosophy at its inception, but to portray the growth of the set of ideas that in particular exercised authority over psychology and the epistemology built thereon. In the work of men so divergently minded as Descartes, Hobbes, and Locke are distinguishable traces of ideas, not generated by the subject-matter, but rather guides in the surveying of the subject-matter. These men and others were breaking with the past; but the break was never so uncompromising as the histories of philosophy often lead the reader to believe. Descartes may have cast aside the scholastic comfortable assurance of the certainty of knowledge; but his dualism was hardly an advance beyond medievalism. Hobbes, for all his discarding of spiritual soul, comparative neglect of the notion of substance and advocacy of the new natural sciences and mathematics, retains a view of the place of deduction that is essentially scholastic. Locke is willing to consider the possibility of a materialistic basis for the soul, but if there is a spiritual substance, has no doubt of interaction, and becomes rationalistic when a counterpoise to the inadequacy of correspondence is needed. In many ways early modern philosophies point back to the course of development that has been sketched, while pointing forward to a new psychology and a psychological epistemology.

A series of transmutations lie ahead. The attacks of Berkeley and Hume upon the notion of substance follow on Hobbes's repudi-

ation of spiritual substance and his practical unconcern with substances of any sort. The empirical tradition made short shrift of the concept of substance, but the victory was never complete. Eradicating the notion of substance may have made a psychology without a soul or a soul-substance possible; but the dissimilarity between thought and things, and body and soul, fostered by the dualism, is at bottom conserved when the soul-substance has been pulverized into mind-dust. Existence retained its irreducible duplicity. The theory of two substances yields to that of two series of states, mental phenomena and physical phenomena. The common expressions, *series of states of consciousness*, *stream of mental events*, *mental states*, or the Lockian *way of ideas*, represent in appearance only freedom from metaphysical bondage. In effect, the psychology of states of mind, with or without a soul, customarily opposes mental state to extra- or intra-organic stimulus, psychosis to neurosis, as effectively as a Descartes ever opposed soul and body. It is supposed that the investigation of the structure and functions of the nervous system will vastly advance psychology. It may be asserted that it has done so; but to that one might retort that it has been in spite of, and not on account of, the discontinuity between the subject-matters of the two sciences. It is hardly unfair to say that common practise in effect simply neglects the discontinuity whenever the discovery is made that a problem can be sufficiently disposed of through physiology. Reducing parallelism or interaction to the level of mere working hypotheses and the adoption of double aspect theories and the like do not seem to eliminate the distinction between the physical and the psychical for the epistemologist nor appreciably mitigate its divorce of thought from things, however much they may facilitate the work of the psychologist. The opposition of the two series operates as an assumption which defines the province and methods of psychology and posits problems for the epistemologist. As has been pointed out, the doctrine of the cognitive correspondence of idea and thing is represented by the correlation of the psychical state with a physical event outside the organism, the psychical states being treated as existences on their own account as much as the physical phenomenon external to the body. The psychical state is also correlated with the intra-organic neurological process; this is the sequel to the older theory of objects causally impressing the soul by means of the excitation of the nerves and animal spirits. The physiological theory, however, has been adapted to the dualistic basis, for to most investigators the possibility of a causal impression on the soul does not obtain, and the physiological process runs its course paralleled by, but not affecting, the mental state. The inter-

actionists, of course, may be regarded as the continuators of the theory that the soul is causally impressed by the agitation of the animal spirits.

This correlation, however, can not be taken to mean a correspondence based on similarity or reproduction by copying; for a mental state is what goes on in one world when something else goes on in a wholly different world. This must be true, at least, of the "appearances," however identical the mental process and the extra-organic or intra-organic process may be at bottom. The metaphysical theory that the physical and the psychical are aspects of one and the same process does not join together the physical and psychical states in a way that is helpful to the epistemologist who starts with these diverse and divorced appearances. If my percept of the typewriter is in consciousness and is mental and psychical, while the extra-organic source of sense-excitation (and the aroused brain-process) are "in appearance" the antithesis of the percept, the assurance that the two are at bottom identical, or aspects of one underlying process, or that one is merely an appearance of that basic reality of which the other is genuinely and organically a part—these assurances do not seem to ameliorate the awkwardness of the situation for the epistemologist. One might flippantly say that it puts him in the position of having to write a metaphysics in order to get a purchase for his epistemology because somebody else's metaphysics has injected into his world of discourse a duality that only another metaphysics can overcome.

The double-edged implication of terms illustrates the difficulties to be surmounted. Sensation, perception, and the image (especially the image) have a physiological meaning and a psychical meaning. They may refer to matters wholly unlike. This is the result of a science having a realm of data peculiarly its own, psychical existence as such, but apparently incapable of abiding in it.

Even in the rationalistic tradition, where the notion of substance continues to have more or less good standing, the objectionableness of a dualism of substances may lead to its repudiation without eliminating, for psychological purposes, and consequently for epistemological investigation, the world division. Whether the psychical and physical series be parallel without reciprocal influence; whether interaction takes place; whether the two series are aspects of a pristine one which is neither of the two series; whether one series is but the externalization of the other, or is related to it as an epiphenomenon; in any case, psychology as psychology does not seem to be helped very much; and the epistemologist's knowing subject and world known remain asunder. A *tief-eingehend* meta-

physics may attain such a resolution of the discord, but a mundane psychology must busy itself with the double series and remain, so far as one can observe, unconsolated by the assurance of the ultimate unity of its apparently dual subject-matter. Of course, such metaphysical quests may reintroduce the notion of the unitary substantial soul, but again this is of no concern to the psychologist, save, perhaps, as a relief when about to relinquish a problem as insoluble in terms of the two series.

The writer, it may be added, disclaims any intention of being impertinent to the psychologist. The only justification for this paper is that it may contribute somewhat to a clarification of the difficulties in which psychology and epistemology now seem to be involved, in the hope that whatever artificial and spurious elements the problems comprise may be discovered and weeded out. Psychology will doubtless be that which those who cultivate it decide that it should and must be. But the fate of epistemology appears to be intimately bound up with that of psychology. And if we validate the assumptions and point of view that historically has generally been characteristic of the psychological tradition, we are validating in some sense and degree a dualism of substances, or dual view of existence, and in its mildest form we leave a breach between mind and the natural world that is a persistent impediment to the epistemologist. That is, we are accepting a type of metaphysics in a subtly pervading form, very much as the scholastic looked out upon nature through metaphysical spectacles inherited from long-deceased ancestors. Taking courage, one might formulate the state of affairs as involving three alternatives: first, we may accept the olden dualistic type of psychology, and expect the perpetuation of all the epistemological tangles resting thereon; or a new kind of psychology may be given us, with the possibility of a reformulation of epistemological problems that will promise a measurable advance toward agreement and solution; or finally, as some hardy spirits do, we may declare that psychology and epistemology have nothing to do with one another, and be as serenely indifferent to the ways of the psychologist as the scientist is to the ways of the epistemologist.

For epistemological inquiry, the establishment of a dualism of substances or some view of existence as twofold as the foundation of psychology and thereby directly and indirectly of epistemology, has its immitigable effects. What, let us ask, has become of Aquinas's notion of the sensible and intellectual species as the means, not the object, of knowledge? Or Descartes's view of sense and imagination as instruments without cognitive value in themselves? Or of any view that assumes that we know things by way of ideas through the correspondence of the ideas with things?

Briefly, the answer must depend on the fact that these instruments and means, when existence is split into halves, are either like the object of knowledge, and are therefore no longer functions of mind, but functions of the physical world, and as resident in that world, are part and parcel of the object of knowledge; or they are processes in the mind, and in no continuity with the object of knowledge. In neither case can their instrumental functions be retained unimpaired. If physical, they are not mental at all, and can play no part in knowing. If psychical and mental, they are, presumably, no more like the object than anything else mental, and their mediating power has departed. If sensations, percepts, and images are in and of the physical world, as wholly physiological processes, they are out of mind, and how they can be instruments of knowing is explicable only on the basis of gratuitous assumptions. If these terms have a double meaning, referring both to a psychical and a physiological process, the one is in mind, the other out of it, just as much as ever. But if the terms indicate a double process, can we maintain that they are still the means of knowing? Just how it can be done is not easy to see. Sense and imagination as physiological, if knowing is an antithetical psychical event, are simply in another world, as far removed from the genuine knowing process as any other events in the world of nature. But how about the psychical correlations? They have no likeness to things. If sensations, percepts, and images are psychical, and if knowledge depends on the correspondence of similars, no knowing of things is possible, for these psychical facts are like nothing else on earth but themselves. Furthermore, even assuming that every psychical event has its physiological (and physical) correlate in no wise helps, for this very assumed correlation shuts the subject up within the world of the psychical and the psychical correlates. Knowing must be confined to the psychical, all that can be known are the psychical representatives; the means and instruments, therefore, become the objects of knowledge. The representatives have no credentials. Or, if it be thought that they possess them, there is no way of verifying them, for the verifying mind can not step outside the psychical in order to assure itself that there was something at all to be represented, much less what is represented and how correct and constant the representation is. The assumption of a correlation must remain an assumption, though how we happen to make it is a mystery.

In short, sensations, percepts, and images, losing all likeness to, and continuity with, the physical events in whose existence we are constrained to believe, may be assumed to have a sign character, but

neither this nor the constancy and the unequivocalness of this character can be established by the test of correspondence without begging the question. The beginning and end of knowing is in the psychical, so long as the two-world view is consistently upheld, and a test for knowledge must be devised which involves no spanning of the gap between the two worlds. Properly speaking any test or criterion at all that relates knowledge to the extra-psychical will involve an assumption which can not be demonstrated. The dictum of Aquinas's must be changed: that which we know first, last, and all the time is our own psychical state. The sensible and intelligible species are all psychical, ideas in the mind, and knowing has to do with ideas.

The question to be put is this: If the historical development has been correctly outlined, and if psychology conserves the assumption or doctrine of two irreducible, unconnected worlds of existence, must not epistemology, when it utilizes that psychology, commit itself to just these difficulties? It may be asserted that history has proved that there are ways out; or at least that they have been suggested. But it is logically impossible to connect two things that by definition can not be connected. Is it not true that attempts to overcome these dualistic difficulties have either been evasions, appeals to metaphysics, inconsistencies, or finally the evoking of a different psychology? The occasionalist may refer to the activity of the deity for the solution of the problem, but this is hardly an epistemological answer to an epistemological problem. Indeed, many of the suggested ways out are metaphysical short-cuts. Thus a spiritualistic metaphysics by the affirmation of an essential identity of matter and mind; but so long as in the world of appearance the two spheres are diametrically opposed, it is doubtful if epistemology has profited. The distinction between primary and secondary qualities has been a suggested solution, but this in the end must signify either an outright inconsistency or a rejection of the dual view. The assumption of a Kantian unknown *X*, a necessary I-know-not-what, is a confession of failure, not a solution. Certainly, even the modern realist asserting that relativity to the organism does not involve relativity to consciousness, is breaking with the traditional psychology. The vexatious thing is that one can not eat one's cake and have it too—one can not break with the older psychology and continue to use it. And so impregnated have become language and common sense with the dualistic view that one finds oneself involved in it just when one is confident he has expelled it. Furthermore, the endeavor to reestablish the criterion of correspondence never quits the field, and the attempt is always prejudiced by a psychology that has no room for correspondence. Interaction between the

physical and the psychical does not seem to help matters in a sophisticated day as the interaction of body and mind on the occasion of knowing comforted Descartes. When sense-data, and all psychological processes, are regarded as completely mental, and added to this is the equivalence of the mental, the psychic, and the conscious; when knowing, start and terminus, is in this psychical world, and by common assumption whatever else there is (if there be anything else) is wholly alien to thought; then, surely, the choice is between subjectivism and despair. When we feel compelled to prove the existence of an external world, while the scientist and the man on the street alike assume its existence and take for granted some acquaintance with and knowledge of it, one can not resist the conclusion that there is something artificial and spurious in the problems generated by the dual view of existence.

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ESTIMATION OF CENTIDIURNAL PERIODS OF TIME: AN EXPERIMENTAL INVESTIGATION OF THE TIME SENSE

Problem and Conditions of the Experiment.—The aim of this investigation was to determine the accuracy and steadiness of judgment in estimating small portions of a day. The experiment was performed at Pittsburgh, December 27 to 29, 1917. Thirty-three subjects took part, all well trained in psychological observation; all but five were members of the American Psychological Association, through whose courtesy the names of the subjects with standard time assigned to each were printed and distributed before the experiment started. In addition to the subjects themselves about 75 persons assisted the experimenter in absorbing the sound waves.¹

The conditions of the experiment were as follows: The subject was directed to stand up and talk without intermission during a stated interval of time. The choice of topic was left entirely to the option of the subject, and he was free to speak with or without notes, to read aloud, to illustrate by charts, chalk, *etc.* The period of time assigned was 15 minutes in case of 25 subjects, 10 minutes for 5 subjects, 5 minutes for 1 subject, while 2 were left free to choose their own period. It will be observed that the 15-minute

¹ The writer wishes cordially to thank his subjects, some of whom came from a considerable distance at great personal inconvenience to participate in the experiment; he wishes also to express special gratitude to his assistants for their faithful cooperation, without which the auditory shock might at times have disrupted the atmosphere and demobilized the investigation.

period is $1/96$ part of a day, or 0.01041666. This can readily be reduced to the $1/100$ part (0.01) required by the experiment by application of the Spearman foot-rule.

Results.—For the 25 subjects whose standard period was 15 minutes the average time was 23.23 minutes, M.V. 3.1415928; for the 5 with standard 10 minutes, average 14.92, M.V. 5.280; for standard 5 minutes, average 6, M.V. 0; for free reproduction, average 23.13, M.V. 1.917. The C.E.'s are + 8.23, + 4.92, + 1, and 0, respectively, or, reducing to proportional parts, 1.548, 1.492, 1.2, 1, for each of the four cases. It will be noted that those who were free to reproduce any period of time succeeded in reproducing it exactly. Of the others, in every case the period was exaggerated, but the longer periods were lengthened, not merely absolutely more, but *proportionately more*, than the shorter. This is clearly a confirmation of the speeding-up principle, or law of cumulative enthusiasm. The disparity between the 15-minute and 10-minute periods would be greater if we leave out of account one of the 10-minute subjects whose actual time was more than twice as long as that of the others, or 23.88 minutes, indicating some misinterpretation of the instructions.

Distraction.—The effect of distraction was tested as follows: At the end of 20 minutes an assistant, Y., seated behind the subject gave two faint taps on the table with a pencil; this signal was repeated somewhat more loudly at intervals of 2 minutes, the increase in intensity of the distraction following precisely the Weber-Fechner Law. This would have necessitated the use of a 250-gram dynamite detonation at the end of 40 minutes; fortunately, however, only one of the subjects came dangerously near this limit. The distraction effect was applied to 14 subjects, whose average time was 26.52 minutes, M.V. 2.1234, while that of normal subjects was 19.05, M.V. 4.111. In other words, the effect of distraction was to *lengthen the time* and increase the C.E., while it decreased the M.V. Calculating the distraction effect in dynes, it was found that had this disturbing sound been omitted, the average time of 13 of these 14 subjects would have been raised to 50 minutes precisely, *i. e.*, to the normal lecture period. It was impossible to make the correction for the fourteenth subject, whose *vis loquendi* was so great that without the distraction his period would have extended indefinitely, or at least till complete exhaustion.

Contrast and Habit.—The influence of contrast was investigated by alternating 15-minute and 5-minute periods. The results were entirely negative. The influence of earlier upon later subjects may be determined by comparing the average of the first ten with the last ten. These are 22.22 and 24.99, respectively. This was at first

thought to indicate a cumulative latency effect. It is more probably explained, however, by habituation. As the later subjects were present during the earlier experiments, they doubtless grew accustomed to the distraction signals and were less disturbed by them than the earlier subjects.

An even more striking effect of habit was observed in connection with the free judgments. The 2 subjects Th. and So. were allowed to select their own time absolutely without restriction. They might, *e. g.*, have spoken for three seconds or for three whole days. Had they come first in the list of subjects they would of course have spoken for exactly 50 minutes, the customary length of lecture periods. As a matter of fact, their average time (23.13 minutes) was almost exactly that of the average for the 15-minute group—nearer, in fact, than could be measured by any watch chosen at random from the entire group of observers. This indicates clearly the effect of habit upon the duration of laryngomotor processes.

Influence of Previous Training.—The effect of general training was brought out by comparing the judgments of members of the Association with those of non-members. The latter, while they were all well trained in laboratory technique, introspection, and general behavior, were considerably younger and less desiccated than the Association members. Contrary to expectation, it was found that the judgments of non-members were *more accurate and more steady* than those of members, the averages being 17.76 and 24.60 with M.V. of 2.468 and 4.321, respectively. Part of this difference may doubtless be accounted for by the deeper emotional effect of the distraction taps upon less sophisticated natures. But if we eliminate this by the method of least squares a difference of 3.33 still remains, which is 9.41 times the probable error. This forces us to the significant conclusion that *accurate appreciation of time diminishes directly with age and psychological training and inversely with the intelligence quotient I.Q.*

Influence of Stereokinesis.—An attempt to measure the influence of the distance traveled by various subjects upon their judgments brought out no significant correlation whatsoever. It is interesting, however, to note that the subject who had traveled the second furthest distance gave the shortest actual judgment of the 15-minute period, 15.02, while the subject who had traveled the shortest distance (excluding those from Pittsburgh itself) gave exactly twice this: 30.04.

Temperature.—The experimenter was able to test the influence of warmth and cold upon the time estimates by the following device, credit for which is due to the Pullman Company. The weather at the time of the investigation was unusually cold, but the research

rooms were well heated. At one session the experimenter arranged so that the steam heat was turned on full, while the doors and windows of the room were tightly closed. At the next session he turned off the steam and opened the windows wide thirty minutes before the experiment began. No significant difference appears in the average times of these two sessions. This is readily explained by the fact that in a cold room the natural heat of the speaker radiates out more freely, raising the temperature in his immediate vicinity far above that of the warm session. The temperature was measured by means of a clinical thermometer suspended by the Hipp on a knife-edge 2 mm. from the subject's right ear.

Topical Classification.—Since the subjects were free to choose their own topics of discourse, it was possible to compare the estimates of time based upon different classes of topics. The topics were classed as laboratory reports, theoretical discussions, mental tests, educational psychology, and nonsense syllables. It was at first proposed to dichotomize the papers into fact and fiction, but this proved impracticable, since most of them contained a certain modicum of each. On the basis finally selected the judgments range in the following order: theory 21.2 minutes, education 22.3, nonsense 23.4, tests 25.6, laboratory 27.8. Comparing the procedure with charts and procedure without charts, it was found that the explanation of charts *lengthened* the time by nearly 5 minutes (4.998). If this correction be made in the classification of topics it would reduce the time for explaining laboratory experiments by the above amount, making it the lowest of all, while it would not alter the time for describing tests, since in discussing tests charts must always be used or the topic reduces at once to the class of nonsense-syllables. The conclusion deduced from this is that laboratory experiments should be explained by auditory rather than visual presentation, while mental tests should be applied with no attempt at elucidation.

Control Experiments.—Our final step was to compare the subjects' estimate of time with the estimate by the experimenter and his assistants. Two methods were employed—introspection and behavior. In the first the procedure was simply to write down immediately after each speaker had finished the number of minutes the hearer judged had been consumed in the phonetic automatism. Besides the writer two assistants took part in these judgments—the only participants who were not biased by having acted as subjects themselves. The estimates of the three observers agree singularly with each other, but they deviate even further from the objective time than does the estimate of the subjects. Thus one paper, standard 10 minutes, reproduction time 17 minutes, was estimated by the

observers as 2 hours, 49 minutes, P.E. 35 minutes, while another paper, standard time 15 minutes, reproduction 28 minutes, was estimated at 13 minutes, P.E. 1.5 minutes. Evidently the estimate of the auditor is tremendously influenced by certain obscure physical factors, such as heaviness, brilliancy, sparkle, *etc.* These factors will be examined in a later investigation.

The behavior method consisted in noting the attitude of the audience as a whole, counting the number of yawns and snores, restless movements and furtive exits, reading irrelevant material, *etc.*; also by measuring the energy of wrist movements and the intensity of the compalmovibratory sounds at the end of each speech. The former manifestations correlate well with the introspective estimates; the latter do not correlate at all. It may be suggested that the latter disagreement is due to the fact that vigorous applause may either be generated by the content of a speech or it may be a conditioned reflex stimulated by relief at its termination. There is some question, however, whether this hedonic explanation is admissible in a behavioristic study. The salivary reflex and knee-jerk were not tested.

Summary.—The most important results from this investigation are: (1) The general tendency to *overestimate* the period. This correlates with the well-known observation that while married men do not actually live longer than single men, the time *seems* much longer to them. (2) The importance of *distraction* as a regulator of time appreciation. This confirms many observations which have demonstrated that the striking distraction afforded by an alarm-clock produces greater precision in building up temporal associations with an eight o'clock lecture or a six o'clock train. (3) The effect of *training*. While distraction increases the accuracy of estimation, practise decreases it. In particular, the habit of lecturing to young and naïve audiences tends to minimize conciseness and lucidity. In certain cases the best and perhaps the only sure corrective is the well-known apparatus designed in 1792 by Monsieur Guillotine. (4) Perhaps the most noteworthy fact brought out by our research is the tremendous disparity between a speaker's own estimate of time and that of his auditors. We may denote the subject's appreciation of the period by "Function *a*" (*Fa*), while the estimate made by his audience is represented by a constant (*k*) times the variable *e*. An exact measure of the performance as a whole is denoted symbolically by the expression *F.a.k.e*.

HARRY CARY

REVIEWS AND ABSTRACTS OF LITERATURE

Science française. Scolastique allemande. G. PAPILLAUT. Paris: Félix Alcan. 1917. Pp. 154.

This is a very interesting, and, in many respects, a valuable contribution to philosophical literature.

The author's aim is to trace to their sources the various streams of philosophical thought. These streams are roughly classified into three groups: English empiricism, French rationalism, and German idealism. In order to understand their full significance, we must go back to the dawn of modern thought, namely, to ancient Greece, whose philosophy has molded all subsequent thinking. We must study with special care the legitimate heirs of Greek thought, the medieval philosophers. There is sometimes found among intelligent people a widespread prejudice against medieval thought. It is believed that Descartes simply created modern thought. Bacon and Locke are hailed as the founders of modern empiricism. But this is a prejudice due to ignorance. Medieval philosophy is remarkable for its wealth of thought, and we must go back to it if we want to comprehend the modern systems.

The various streams of medieval thought can be divided into three groups, which correspond to the three great modern philosophical systems. English empiricism can be traced back to Roger Bacon. This remarkable thinker is indeed, as has often been remarked, the precursor of his namesake, Francis Bacon. He is also the precursor of Locke, Hume, and John Stuart Mill. He has laid the foundation of sensism, of empiricism, of individualism, and has expounded their fundamental principles most accurately. He is the father of English philosophy.

The century of Roger Bacon was also the century of St. Thomas Aquinas. St. Thomas was Descartes's favorite author and exercised a powerful influence upon his thought. In St. Thomas's philosophy can be found the key, not only of the *Discourse on Method*, but of all subsequent French rationalism. Is it St. Thomas, or is it Descartes, who wrote the following words: "What is natural to reason appears to us so necessarily true that we can not even think it to be untrue"?

Amid its riches of thought, scholasticism had, however, obsolete principles, devoid of true life, principles which constituted, as it were, the pathology of medieval philosophy. Following an evil propensity of the human mind, it converted concepts into real entities, regarded the species as an object having its unity, and converted empirical laws into active agents. The grammatical categories were supposed to apply to external events and to regulate the cosmos. By

the side of the great empiricists and rationalists, Roger Bacon and Thomas Aquinas, there were pseudo-philosophers and pseudo-scientists, Eckhart and Tauler, Suso and Boehme, who are the true ancestors of the great philosophers of modern Germany, of Kant and Hegel, of Schilling and Schopenhauer. Kant's philosophy is, therefore, a mere caricature of scholasticism, a parasitic growth, as it were, devoid of originality and absolutely worthless.

Attacks on German thinkers are so numerous nowadays that some readers will perhaps suppose this work to be a work of circumstance, devoid of permanent value. It is not so, however. The author, who is a professor in the School of Anthropology at Paris, was expounding the same view long before the war began. Moreover, the author's epistemological point of view is no less interesting than his opinions about the historical tradition.

The epistemological system, of course, is not entirely new. Levy-Brühl's words "*Tout est dit*," apply to philosophy more than to any other branch of human knowledge. Papillault's system can be traced back to Pythagoras, whom the author mentions with reverence. But, whereas Pythagoras's thinking had come to us in isolated, difficult, second-hand fragments, we now see it before us in a living form, and we can form a clear conception of what a Pythagoras of the twentieth century would say and think.

The criterion of truth is to be found in the mathematical sciences, especially in arithmetic, the simplest and clearest among them. The unit is the prototype of the absolute monad dreamed by metaphysicians. It belongs to the genus number, of which the particular numbers are the species, the nature and value of which are perfectly known according to its place in the series. Numerical concepts are thus perfect concepts, to which all other concepts must be reduced in order to be understood. And the author analyzes accordingly the concept of cause, showing at the same time the superficial character of the analyses previously made by Hume, Karl Pearson, and other English empiricists.

The book deserves to be read by all lovers of philosophy.

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A Defence of Idealism. MAY SINCLAIR. New York: The Macmillan Company. 1917. Pp. xvii + 355.

This "Apology for Idealistic Monism" is written on the theory that a strong attack is the best defence, at least for a philosophy that is "in process of being bowled out." In a rapid-fire review of Samuel Butler, Bergson, McDougall, James, and Schiller, the new real-

ism and the "new mysticism," the author undertakes to show how contradictions and dilemmas follow in the wake of pluralism. The discussion is uniformly good-natured and vivacious. Miss Sinclair follows her literary instincts in writing the book, and insists upon being interesting. To this end she adopts a conversational and informal style. To illustrate: "So simple and direct and clear is Mr. McDougall that he puts a pistol to our heads and presents us with two alternatives and two alone" (p. 74). Again: "There can be no question of a kick in the ribs dwelling to all eternity in the bosom of the Absolute; because, for the new realist, there is no Absolute and no bosom" (p. 224). If the style is informal the design of the book as a whole is not less so. The author "follows the lead of the subject-matter," with no attempt at systematic exposition, her aim being primarily critical rather than constructive.

Miss Sinclair's idealism is difficult to comprehend, because it is so largely defined in negatives. Although she asserts that "the method of philosophy should be purely logical" (p. xi), she believes that "the monist's only chance is to abandon his epistemology; even if the alternative has to bear the dreadful and dishonored name of spiritualism" (p. 211). Miss Sinclair seems to mean by "epistemology" an abstract mode of dealing with thought and thought-relations. The idealist, she says, "can not conjure the universe out of such feeble propositions as that thought is unity and unity is thought" (p. 211). "To say that 'Thought thinks itself' is not enough. From the unsubstantial forms of its own thinking it can build no bridge from its own world to the world where things are and are done. But spirit can be supposed to do things. He [the monist] can define it as that which thinks, and wills, and energizes in one undivided act" (p. 297). Miss Sinclair's idealism is, therefore, monistic and concrete. Little more can be said about it. Why she should speak of it as the "new" idealism is not clear. It might be added that in spite of the author's determination to desert "epistemology" she frequently lapses into abstractness.

Because the method of the new realism is logical, Miss Sinclair believes it to be idealism's strongest opponent. "The chances are that it is neither pragmatism nor humanism, but the new realism that will succeed in establishing itself as the dominant philosophy of the twentieth century" (p. 297). The longest chapter in the book is devoted to a study of the new realism, with special reference to the work of Russell. "Pragmatism and humanism," as presented by James and Schiller, are criticized at length. Dewey is overlooked. Bergson receives special attention in the chapter on "Vitalism." The remaining chapters, devoted to various topics, are more interest-

ing than important. In the final chapter, "Conclusions," an attempt is made to sum up the argument, and show how it bears on the problem of immortality.

As *A Defence of Idealism* Miss Sinclair's book must be called a failure. She gives neo-Hegelian idealism over to the enemy without any attempt at defence, while the "new idealism" which she advocates had no enemies at the time when the volume was written. "A Defence of Monism" might be a better title. As a criticism of certain contemporary tendencies in philosophy the work has considerable merit, and it will no doubt be welcomed as a contribution to current discussions.

D. T. HOWARD.

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JOURNALS AND NEW BOOKS

REVISTA DE FILOSOFIA. November, 1917. *Fantasmas de la selva misionera* (pp. 329-340): J. B. AMBROSETTI. - A collection of legends in vogue among Paraguayan Indians. *Noción de Dios y noción de espacio* (pp. 342-345): FLORENTINO AMEGHINO. - The only immaterial infinite is space. The notion of God is a childish notion, born when man was still in a savage condition and which is now disappearing in the light of civilization. *Los valores morales de Ameghino* (pp. 345-352): VICTOR MERCANTO. - Ameghino devoted his whole life to the advancement of science in Argentina and is a model for the new generation. *El desenvolvimiento social hispano-americano* (pp. 353-475): ERNESTO QUESADA. - A very important study of the civilization of American Indians. *Interpretaciones nuevas de la filosofía judía* (pp. 476-484): F. I. LARIOS. - A critical study of Nima Hirshensohn Adlerblum's work "A Reinterpretation of Jewish Philosophy." *Influencias de Lamennais durante la emigración argentina* (pp. 485-493): JOSÉ INGENIEROS. - Lamennais had an immense influence in Argentina during the second half of the past century. From the school of Lamennais, the Catholic, came Felix Frias; from the school of Lamennais, the free-thinker, came Francisco Bilbao.

Whitehead, A. N. *The Organization of Thought, Educational and Scientific*. Philadelphia: J. B. Lippincott Co. 1917. Pp. 228. \$2.00.

Book Review Digest. Edited by Margaret Jackson and Mary Katharine Reely. New York: The H. W. Wilson Company. 1918. Pp. 699.

De Sarlo, Francesco. *Psicologia e Filosofia: Studi e Ricerche*. Volume Primo. Firenze: La "Cultura Filosofica." 1918. Pp. 546. 12 lire.

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NOTES AND NEWS

THE JOURNAL OF PHILOSOPHY has much pleasure in circulating the following letter from the editor of the *Revue de Métaphysique et de Morale*. Since that periodical began its career it has been a model of what a philosophical periodical should strive to be; it has set a standard of humane scholarship and scientific competence that has earned the gratitude of readers everywhere. The invitation to co-operate in the work of making philosophy an elastic and effective instrument of disciplined vision and intelligence is one to which students of philosophy here can not possibly be indifferent.

More and more human values are coming to be recognized as the ultimate subject-matter of philosophy, values which have to be pursued along the path of one social ideal or another. The clarification of democracy as an ideal and as a purpose demands the best there is in us, and the opportunity offered by the *Revue de Métaphysique et de Morale* to speak directly to all its readers will, we trust, meet with a response gratifying to all friends of philosophy in both democracies.

"Now that the United States has placed herself by the side of France, that she might seal with her blood the compact of our long-standing friendship and affirm the community of our ideals, it would seem that the thinking men of the two countries have also a mutual mission and duty to fulfil. *La Revue de Métaphysique et de Morale* is moved by the desire to play its part so far as possible in bringing these men to the consciousness of this duty.

"The events of these last months have revealed to every one the fact that peoples are bound together by something more than the possession of common interests. They are united by sentiments and principles. Materialistic realism, whatsoever guise it may assume, has proved itself deficient. To the question which our poet Vigny asked, not long ago:

" . . . Si les nations sont des femmes guidées
Par les étoiles d'or des divines idées?"

America has answered by the mouth of her statesmen in the same way that she had already answered by that of her thinkers and poets; for

was it not one of the latter who, as we were recently reminded at l' *Institut de France*, gave the idealistic counsel, "Hitch your wagon to a star"?

"It belongs to our philosophers, while trying to define and strengthen the ideals which serve as motives to our two peoples, to make apparent at the same time our essential affinities, and to render more evident and more lasting our brotherhood in all that for which, as nations, we live and fight.

"During these last few years the increasing intellectual communion, due to the coming of certain of your most noted professors to our universities, and the crossing of the Atlantic in turn by some of our greater literary men and teachers, has most effectively advanced our mutual understanding of each other. In the realm of speculation, notably, your William James has become as familiar to our students as one of our own, whilst you, on your side, have given a generous welcome to the teachings of Renouvier, Boutroux and Bergson.

"It is desirable now, and will be still more desirable in the future, that all those who, in America and in France, have been working for the eternal interests of humanity should not only maintain but also knit closer these intellectual relations, which will mean as much to the two countries as do our common battle-fields. It will be to our mutual profit so to do.

"The pragmatism of some of your writers, in whom the love of action and the attachment to ideals go hand in hand, would thus renew and invigorate our ancient rationalistic tradition, which in its turn, by its veneration for untainted truth and its development of the spirit of criticism, might furnish you with a useful counter-balance. As your ethical societies, permeated with the freedom of religious thought, are, in reality, making the same effort as is our secular system of education, whose aim it is to maintain sincerity of heart and the dignity of man, would it not be well if these efforts were kept constantly related to one another? In your conception of Right and Democracy, as they were recently so splendidly defined by the President of the United States, we seemed to recognize the Spirit of France, and we felt that we were indeed compatriots in the realm of the intellect. Would it not be worth while to make a mutual attempt to throw light on all the political and moral problems, as well as on those in the order of logic, metaphysic, and psychology?

"The *Revue de Métaphysique et de Morale* which, for the twenty-five years of its existence, has, in some measure, encouraged the practise of profound speculation and which has thereby played a part in the evolution of the philosophy of our time, is anxious to facilitate, and, if possible, to help organize an interchange of thought between

the two continents. Above all, the *Revue* would be glad to open its columns to the authorized representatives of American thought; it desires that the names of some of its new allies and friends of the present and future should figure among its contributors; and it would be glad to find readers among university students and in the more cultured circles of America.

"That it may be more widely known in the United States, and that it may be circulated where its reading would bear fruit, it does not hesitate to ask for your support; with this end in view it submits to you herewith a list of the principal articles which it has published since its foundation.

"You will, we are persuaded, consider this effort towards the intellectual union to which we invite you as consonant with the best traditions of our two countries; as we are convinced that it would be the surest prelude to the *Society of Nations* spoken of by your President: a Society which can have no firm foundation unless it be first and above all a community of understanding.

XAVIER LÉON."

MR. WALLACE CRAIG, University of Maine, Orono, Me., in connection with his research work, finds urgent need for a copy of Ehrenfels, *System der Werttheorie*, and will deem it a great favor if someone will sell him a copy. He would be glad of an opportunity to buy also other works on the psychology of value, as, those of Brentano, Kraus, Meinong, Schwartz, Simmel, and Band III. of Wundt's *Grundzüge der Physiologischen Psychologie*.

THE University of California has issued an attractive announcement of the publications which have been prepared in commemoration of the semi-centennial of the University. The pamphlet contains sixty-eight titles, classified under the headings, Philosophy, History, Literature and Language, Mathematics and Science. Of particular interest to readers of the JOURNAL are the following:

Footnotes to Formal Logic: Charles Henry Rieber.

Fugitive Essays: Josiah Royce. Edited with an Introduction by Jacob Loewenberg.

Idealism and the Modern Age: George Plimpton Adams.

The Idealism of Kant's Successors: Josiah Royce.

A Survey of Symbolic Logic: Clarence Irving Lewis.

HAROLD ERNEST BURTT has been appointed instructor in psychology at Harvard University.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE OBJECTS OF VALUATION

IN an earlier number of this JOURNAL,¹ I presented a theory about valuation-judgments. In so doing, I intentionally put to one side the question of the nature of value. I did not wish to add further complication by introducing a subject about which so much difference of opinion already existed. It seemed to me that it was theoretically possible to distinguish the logical or formal aspect of valuation from the nature of value in the same way in which it is possible to distinguish the logical form of, say, a descriptive judgment from the particular subject-matter described, or an asymmetrical transitive relation from the question as to whether the relation concerns a spatial, temporal or numerical series. I still think this distinction of problems is logically sound, but intervening discussions have changed my mind about its availability at the present time. Consequently, I hope at a later time to take up a discussion of the nature of value itself. Just now I want, however, to take advantage of some of the recent discussions to show wherein I failed to make clear the primary point of my theory. I shall use selections from the articles of Mr. Perry² and Mr. Bush as texts upon which to hang certain comments.

Mr. Perry says: "Suppose a situation in which I suffer from ill-health and hope to recover through the agency of a physician. There are several items in this situation which must be distinguished. I suffer from ill-health, and am aware that I dislike it. I desire recovery and am aware that I desire it. I believe that consulting a physician conduces to recovery. I adopt the course of consulting a physician, as a course conducive to my recovery. . . . Subsequently, because of what I dislike, desire and believe, I do consult the physician, and, thereupon, in consequence of having consulted the physician, I recover. . . . But there is no case of a value's being constituted by a judgment of it."

¹ Vol. XII., pp. 512-523, since reprinted with some additions in my *Essays in Experimental Logic*, pp. 349-389.

² This JOURNAL, Vol. XIV., No. 7, Dewey and Urban on Valued Judgments, the quotation being from pp. 173-174.

Now on the basis of the particular situation described by Mr. Perry I quite agree. According to the terms of the illustration, there is already in determinate existence a negative value, ill-health, there is also a determinate positive value, recovery (which, of course, is none the less determined for knowledge because it does not as yet physically exist). In addition to these intrinsic, immediate, or independent values, as they are variously termed by different writers, there is also a determined instrumental, or dependent, value: seeing the physician is serviceable, useful, valuable, *for* the positive value of health. Nothing could be clearer or more satisfactory. The most that a deliberative judgment could effect under such circumstances would be to assist in bringing into *physical* existence a value already, as value, given. And only an extreme bungler could confuse the assistance given by judgment in bringing a value into existence with that given by judgment in determining a value as such.

Of that particular bungling performance I plead not guilty. It might be a purely verbal matter to say that I do not conceive that propositions *about* values already given *as* values are valuation judgments at all, whether they are about value as immediate or about value in the sense of useful, any more than I should wish to term a judgment about a pin a pin-judgment. In such a case as that stated above, there is nothing whatever to mark off any distinctive logical type of judgment. If we call such judgments valuation-judgments, they are on precisely the same logical level as any propositions about matters of established fact. I can not make it too emphatic that I started out, so far *as respects cases of this kind*, from precisely the point of view maintained by Mr. Perry.

But there remains a question of fact, a question which is not concerned with the proper linguistic use of the term valuation or value-judgment. Are there not situations in which, while a man dislikes ill-health, it is not, *under the specific circumstances*, the object of his supreme dislike, and where, moreover, he does not know *what* he should supremely dislike and supremely desire? Are there not situations wherein the adequate data for settling a determinate like and dislike *can not* be had until after an act which issues from a preliminary estimate or valuation as to what the good *will* be? This does not mean that health has not been a good in the past, or that it is not a good "in general." It means that there may be a case in which an agent is genuinely uncertain whether to desire—or like—the recovery of health or to desire making a medical discovery at the cost of his own health. In such cases there is no good or value given to judgment; whether the good be recovery of health or loss-of-health-along-with-increase-of-reputation-and-a-medical-discovery-to-aid-others is genuinely unsettled. Now it was of this sort of situation

and of this only that I contended that valuations aid in determining a new good; and contended that *such* valuations possess a distinctive logical character which the orthodox logics have passed over too lightly. Now either or both of these convictions may be wrong, but their error can hardly be shown until the prior question has been raised: Are there situations such that it is objectively uncertain what *their* good, value or end is—it being understood that their good *if* determinately given would be an intrinsic and immediate good? After this question has been dealt with, the question of the nature of the judgment of valuation (estimation or appraisal) involved in them will naturally follow.³

The passage from Mr. Bush is as follows:⁴ "The city of Syracuse has a very beautiful institution. The state fair is held there every autumn, and on the evening of the last day there is a parade of all the city's children. The people of Syracuse regard this parade with an almost passionate affection. It seems natural to say that they value it supremely. Does value really attach to things like this or to the means used to bring them about? Of course, it is a verbal question, but it is a question that takes us to considerations where instrumentalism is no longer a sufficient point of view."

As in the case of the former quotation, I can only express my unqualified agreement—except that instrumentalism is not so much insufficient as grossly impertinent, irrelevant. It would be, as Mr. Bush intimates, a purely verbal matter to say that in such cases no valuing at all occurs. Yet such a verbal approach might be one way of getting at a fact, namely, that no valuing occurs in the sense of reflective comparison, an inquiry which involves deliberating, weighing one consideration against another. This might be a rhetorical

³ It is possible, though I am not sure, that I might make my point in terms of Mr. Perry's own thinking by reference to his theory of the "objective" of judgments involving belief or commital. See this JOURNAL, Vol. XIII., pp. 569-573. It seems reasonable to suppose that there are cases of genuine doubt as to what the "objective" *should* be, as to what the purport or deliverance of an entertained belief *better* be. In such a case, if we employ reflection, if we make a judgment to decide upon an "objective" as a precondition of applying that "objective" in a further judgment, there is found, I fancy, a kind of judgment logically similar to that which I was dealing. When Mr. Perry in the same connection says that the "pragmatic theory is correct in emphasizing the formative, creative action of mind, and in likening the cognitive situation to the desiderative or volitional situation" (p. 572), and yet in a later article takes such pains to deny any formative action on the part of thought in constituting the object of a desiderative situation, I confess myself perplexed. I get the feeling that he has left his older opinion about the nature of valuation-judgment untouched by his revision of his theory of belief-judgment, and that if he applied his latter theory to the former topic it would inevitably result in a view of valuation not incompatible with that which I set forth.

⁴ This JOURNAL, Vol. XV., No. 4, pp. 95-96.

way of getting at the fact that to the citizens the object is in-valuable, that is to say one whose worth is not subjected to critical questioning. The citizens value it "supremely" not in the sense that after considering and comparing any number of things they have arrived at a definitive scale in which the procession outweighs all other goods, but in the sense that they unreservedly, without any questioning, prize and cherish the institution.

So far there is, I take it, no difference of opinion between Mr. Bush and myself; he recognizes as explicitly as any one could desire that I expressly drew a distinction between the non-cognitive act of prizing, finding good or dear, and the cognitive act of valuation. But he goes on to ask whether in making this distinction "the word value does not become synonymous, in the instrumentalist presentation, with the word use." And if such be the case, why not, as Mr. Bush pertinently asks, drop the word value and confine one's self to the term use or valuable? And he goes on to interpret my position as meaning "value occurs when we face the question, What things or methods have the value of utility under the circumstances?"

Just here is where I entirely failed to make myself comprehensible to Mr. Bush. Just how far the obscurity of my exposition is the cause I can not well judge; if my exposition as a whole gave Mr. Bush this impression, I express my appreciation of his tenderness in dealing with an account which is complicated and prolix to no other end than to arrive at a result which can be stated in a few sentences and with which, as he says, no one would disagree. Possibly the term "instrumentalism" itself suggests that judgments are held to be about instruments or means; possibly calling a judgment of valuation a practical judgment suggests, in the current implications of the word practical, the same idea. If so, both suggestions are quite misleading. The instrumental theory of judgment does not mean that judgment is about instruments; it refers to the *function* of all judgment *qua* judgment, not to the subject-matter of some judgments. In any case, the emphasis was put not upon the instrumental, but upon the *experimental* character of valuations. It may well be that the primary linguistic connotation of the term "practical" is useful; unfortunately we have no unambiguous words in this connection. But I tried to make it clear that by "practical" I meant *what* is to be done, rather than *how* to accomplish something already given as a satisfactory end. Judgments about means, so far as they do not themselves enter into judgment about the constitution of an end or good,⁵ are, I should say, technical rather than

⁵ See *Essays in Experimental Logic*, pp. 340-344, and pp. 358-362 for cases in which valuation of means and of ends, respectively, are two ways of getting at the same thing.

practical; by which I mean that our important practical inquiries concern ends and goods.

This brings me, of course, to exactly the point which I made in discussing the passage from Mr. Perry. Sometimes every immediate or intrinsic good goes back on us. We do not confront any indubitable good. We are in the dark as to what we *should* regard with passionate esteem; we are beginning to suspect that something which we prized unquestioningly and directly in the past is no longer worth our while, because of some growth on our part or some change in conditions. Now in such a state of affairs we may of course trust to luck; we may wait for something to turn up which will afford a new unquestioned object to cherish and hold to. But sometimes we attempt to further by means of deliberation the production of such a good. We search in order to form an estimate of what would be the good of the situation if we could attain it. Add to these conditions the further condition that we can not be *sure* that we shall prize or like the thing in question until it has been brought into existence by an act following upon a judgment, and we have before us the kind of situation with which I was concerned. It frequently happens that, being in uncertainty, I conclude after consideration that the best thing that I can do is so and so—in short, that if I act so as to bring certain consequences into existence I *shall* like them or find them good. But when I act and the consequences follow, I do not relish them at all. Now this, I submit, is a very different sort of thing from discovering that I have made a mistake in my judgment as to the useful means of accomplishing something. It means that I have made a mistake in my valuation of an immediate good—that is of what, *when it is brought into existence*, will be an immediate good—or bad.

Let us return to the illustration of Mr. Bush. It is conceivable that some citizen of Syracuse who had habitually regarded the procession with passionate regard, might be led to question its worth. He might learn that a number of children had been made ill, or become seriously over-excited, or were becoming over-fond of display for sake of attracting attention to themselves. This would not alter what was past, his former liking, the fact that he *had* experienced an immediate, independent good. But it would lead him to a new act of valuation; he would seriously question whether he is henceforth to regard the parade with liking, hesitation or repugnance. He might attempt to use his judgment to come to a reasoned conclusion in the matter, and might then try to arrange so that the next parade would not involve these obnoxious features. Or he might attempt to arrange some other function giving the opportunity for an immediate realization of the beauty of congregated child-life. In any case, the

result when it occurs will be an immediate good or bad—a matter of direct liking or the reverse. But, none the less, it will have been constituted, in part,⁶ by the prior valuation—the prior reflective estimate of a non-instrumental good.

I should be glad to think that this explanation, if I have succeeded in making anything plain, would evoke an opinion that if this is what is meant, nobody will disagree. But I am not sanguine that such will be the case. For my view goes contrary to the classic view not only as to the logic of all judgments, but of moral and political conceptions. For the prevailing view is that goods, ends, “values” are all given, given in the sense of being completely there for knowledge, provided only we could get at them. Disputes in ethical and social theory have concerned themselves for the most part only with the question of *where* and *how* the goods are given: whether in experience, feeling, sensation, or in thought, intuition, reason; whether in the subject or in the object; whether in nature or in some transcendental realm. The important fact (provided it be a fact) that serious inquiries into conduct, individual and collective, must be concerned with an hypothetical and experimental effort to bring *new* goods into existence, an attempt made necessary by the slipping away of all given determinate goods, fails to secure recognition. I console with a belief that while my own inexpertness in statement is largely responsible for my failure to make myself understood, some of the difficulty lies with the immensely difficult transformation in methods of thinking about all social matters which the theory implies.

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BEHAVIOR

IF usage is properly based upon etymology, the word behavior may be applied to any observed change in a given object, under certain more or less clearly observable conditions. Thus the physicist may well speak of the behavior of the X-rays in the presence of a magnetic field; and the chemist is warranted in telling us that “the behavior of the nitrous salts of the amines is worthy of attention.” We are thus referring to characteristics of what we speak of as the objective world.

The word is so commonly applied to living animal objects, however, that this application is usually taken for granted in ordinary

⁶ I have never said that judgment is the *sole* determinant of a new object, but only that it serves to *reconstruct* or *reorganize*, which implies another and independent variable.

parlance. But it is to be noted that in employing it with this narrowed reference we still speak of characteristics observable in the objective world with which the physicist and chemist also deal. We are treating of certain aspects of biology which is an objective science. In this sense I shall employ the word in what follows.

Now in studying animal life we observe various types of behavior. At one extreme we note what we call reflex or instinctive behavior, according as we find it more or less simple; this appears as the relatively immediate reaction to a given stimulus. At the opposite extreme we discover highly complex behavior that is hesitant and not immediate.

The biologist studies both of these types of behavior in all forms of animal life; in the higher animals and in man, and in both cases quite objectively. He studies them in all their forms and relations. He analyzes them, and in connection with certain of their forms observes, among other things, their relation to nerve activity, and thus establishes a special science of neurology. He observes in connection with certain other forms their relation to chemical reactions in the living tissues concerned, and thus establishes a special science of biochemistry.

But the biological student is himself a man, and as he observes his own activities, still as part of the objective world, he discovers in them these same two types of behavior. When in regard to his own body he studies that highly complex form of behavior that is hesitant and not immediate, he finds all that he discovers in connection with his studies of this type of behavior in other animals; but in very many cases *he discovers also something more*. He finds not only behavior of this special type, but "*conscious behavior*."

In this observation of his own behavior the student then has not only the characteristics that yield the special sciences of neurology and biochemistry, for instance, but a quite different characteristic that yields the special science of the conscious; and this is what has always been designated as psychology.

Arguing from analogy, or by other means, he may hold that this special type of behavior in other men, and in animals, must also have this conscious characteristic. This is, however, a matter of inference, and not of objective observation; and it is an inference which involves the metaphysical assumption that certain forms of behavior always have corresponding with them certain changes in consciousness such as he notes in his own experience.

Acting in accord with this inference based upon this assumption we are enabled to discover certain forms of behavior, or tendencies to behavior, in our fellow men which otherwise would be unknown to

us, by making note of the changes of consciousness they report to us by word of mouth. The great practical value of this is a matter of everyday experience, and is emphasized in the common life of the physician who constantly treats of the conscious states of his patients as symptomatic of special forms of organic behavior.

The "comparative psychologist," and the "behaviorist" also, makes constant use of this same assumption and inference, although they usually do not note the fact, and commonly speak of their work as though it was as purely objective as that of the chemist or physicist. They are really engaged in the special investigations of a certain type of biological problems; which special investigation is greatly facilitated by the acceptance of the metaphysical hypothesis of neururgic and noetic correspondence above referred to.

Now it is evidently possible for some man to hold that the consideration of neurology, brought to his notice in the course of his study of behavior, is unimportant and unfruitful, and hence unworthy of attention. And he may hold a similar view in regard to biochemistry. This is a matter of personal opinion. One who holds it, however, and who rejoices to proclaim it, is scarcely likely to be looked upon with respect by other thoughtful men in the scientific world.

In the same manner it is evidently possible for some man to hold that the consideration of psychology, brought to his notice in the course of his study of behavior, is unimportant and unfruitful, and hence quite unworthy of attention. But it seems to me that if he does so, and rejoices to proclaim such an opinion, he can scarcely expect to find that in the long run his views will be held to be significant. Yet, if I understand the situation, it is just such a view that is held, and openly proclaimed, by Professor John Watson, and by those who follow his lead.

This is no occasion to attempt to show that the study of the conscious characteristic of self-observed behavior is important and fruitful and, therefore, fully worthy of attention; as I think it would be quite easy to do. I would here merely emphasize the fact that Dr. Watson, in taking the position he holds, while developing the exceedingly valuable objective biological science which is now commonly called "behaviorism," is deliberately abandoning the study of psychology altogether; and in asking us to discard the concept of consciousness, and to substitute for it the concept of behavior as the substance of psychology, is dealing with an obfuscation that can not but be deplored.

Let us now turn to another closely allied point. As above noted, in the course of our observation of our own behavior as part of the

phenomena of the objective world, our attention is called to a certain form of this behavior that has a "conscious" characteristic. This "conscious behavior" Professor B. H. Bode believes he has shown to be "a future adaptation that has been set to work so as to bring about its own realization." I am not myself convinced that such a conclusion can be reached in relation to other animals and men as the result of purely objective observation of the type employed by the behaviorist and other biological students; although Dr. Bode's treatment seems to imply that it can.¹ Adaptation itself, at all events, is such an objectively observed fact; and Dr. Bode proceeds to state that consciousness is just this particular kind of adaptation.² This is as though, having found that a definite form of crystal refracts light in a certain way, one should say that this particular kind of refraction is the definite form of the crystal. One in making such a statement would be taking a definite characteristic found in connection with a definite objective situation, and identifying the objective situation with the characteristic. So far as I can see this is exactly what Dr. Bode does when he argues that "Consciousness . . . is just a future adaptation that has been set to work so as to bring about its own realization."³ The logical absurdity of such a procedure is so self-evident that it would call for no comment were it not that it seems impossible to believe that Dr. Bode can intend to defend such a position. Yet his words certainly imply that he does; and if he does not, he surely should feel called upon to make his view clearer; because as it stands it is one that is representative of a good deal that is written nowadays by certain teachers of psychology in this country who, on the face of their words, apparently glory in their logical shame; and because it is dignified by being expressed by Dr. Bode in a chapter of the lately published *Creative Intelligence*, a book made up of essays which are supposed to present a "unity in attitude," the other chapters being contributed by John Dewey, Addison W. Moore, Harold C. Brown, George H. Mead, Henry W. Stuart, James H. Tufts, and Horace M. Kallen.

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¹ Cf. *Creative Intelligence*, pp. 233 ff.

² Cf. also *op. cit.*, pp. 242 and 256.

³ *Op. cit.*, p. 244.

DOCTRINAL FUNCTIONS.

THE term propositional function, invented by Mr. Bertrand Russell, is perhaps the weightiest that has entered the literature of logic and mathematics in the course of a hundred years. It has the rare distinction of being a perfect name for a supreme concept. I am not about to expound its meaning at length nor to attempt to justify my estimate of its significance. It seems desirable, however, to remind the reader of so much of the term's meaning as will be essential to an understanding of the principal thesis of this paper.

Let it be recalled, then, that a propositional function is any statement containing one or more variables. If we denote these by x, y, z , etc., then such simple statements as x is a philosopher, $x=2$, x is a brother of y , $3x+2y=5$, x has been divinely appointed by y to subjugate z , $4x-3y+9z=7$, will serve to exemplify what is meant by a propositional function. It is of fundamental importance to bear in mind that propositional functions, though they have the form of propositions, are not propositions. A proposition is a statement that is true or else false, but a propositional function is neither true nor false. The statements, $2+5=7$, $3+6=7$, are propositions, one of them true, the other one false; but the statement, $x+y=7$, is neither true nor false; it is not a proposition but is a propositional function.

To derive propositions from propositional functions it is evidently necessary to substitute for the variables present in the latter what we may call constants, or terms of definite meaning; but such substitution, though necessary, is not sufficient, for it is always possible to select such constants as will, if substituted for the variables of a given function, convert the latter, not into a proposition, but into non-sense, it being understood that a non-sensical statement is one involving a contradiction in terms. Suppose, for example, that our given function is the statement, x is an integer less than 5. The class of all integers less than 5 is a constant, a definite somewhat. Substituting this constant for the variable x , we get the statement, the class of all integers less than 5 is an integer less than 5. This is neither a propositional function nor a proposition; it is non-sensical, the non-sense, or contradiction in terms, consisting in talking of a class of things as if a given class could conceivably be one of the things composing it.

The constants that, when substituted for the variables in a given propositional function, convert it into non-sense, may be called *inadmissible* constants for that function; all other constants, since they

convert the function into propositions, true or false, may be called the *admissible* constants for the function. The admissible constants for a given function fall into two classes: those that convert it into true propositions and those that convert it into false ones. It is convenient to call the constants of the former class *verifiers* of the function; and those of the latter class *falsifiers* of the function. The *verifiers of a function* are said to *satisfy* it and are called the *values* of its *variables*; and the propositions derived from a function by substitution of values of its variables for the variables themselves are called *values* of the *function*. Thus the values of a given function are the true propositions that are derivable from it by replacing its variables by admissible constants.

These ideas and distinctions being premised, I turn to the task of this paper, which is that of viewing in a somewhat new light the essential nature of what has come to be known in mathematics and modern logic as the postulational method of founding and constructing mathematical sciences or branches of mathematical science. What I shall say of postulate systems in general the reader may most readily grasp and verify by having constant reference to some specific system with which he may chance to be specially familiar, as, for example, the widely known system for Euclidean metric geometry, presented by Hilbert in his *Foundations of Geometry*.

It is well known that any postulate system (or system of assumptions or of axioms or of primitives as the postulates are variously called) contains one or more undefined terms, and that at least one of these denotes an *element*, that is to say, a thing or a substantive as distinguished from a relation. In the Hilbert system, for example, there are three undefined element names, point, line, and plane; in Veblen's *System of Axioms for Geometry*¹ there is one such name, point; and the same is true of Pieri's beautiful system for elementary geometry, of which an excellent account is found in the late Louis Couturat's *Les Principes des Mathématiques*, p. 192.

What is the office of the undefined element names in a postulate system? Undoubtedly the presence of these lends the system the appearance of having a definite subject-matter. The appearance, however, is appearance only: a postulate system has no definite subject-matter. We are said to interpret such a system—to assign it a definite subject-matter—when we assign to the undefined terms any specific significance reconcilable with the postulates. How many interpretations does a postulate system admit? At a later stage of this paper it will be proved that any postulate system admits of any given transfinite cardinal number of interpretations. At present it is

¹ *Transactions of the American Mathematical Society*, Vol. 5, p. 343.

sufficient to bear in mind the familiar fact that a postulate system admits more than one interpretation, for this fact shows that the rôle of the undefined terms is the rôle of variables, and it is this aspect of the matter to which I wish to draw attention. Because of the presence of variables in its statements a postulate system is not a system of propositions, as it is commonly said to be, but it is a system of propositional functions; and the same is, of course, to be said of all statements, or theorems, that are logically deducible from the postulates, for all such theorems involve the same variables as do the postulates themselves.

Now let P denote any given postulate system, and denote by T the set of any or all theorems deducible from P . Consider the body B of statements comprising both those of P and those of T . What ought B to be called? A doctrine? Certainly not, for a doctrine ought to have a specific subject-matter and it ought to be true or else false; but B , being composed of propositional functions, has no such subject-matter and is neither true nor false. Observe, however, that, though B is no doctrine, it has the *form* of a doctrine; note also that B contains variables and that it is, therefore, itself a variable in the sense in which any function of one or more variables is itself a variable. The suggestion arising from these considerations is inevitable and compelling: B ought to be called a doctrinal function.

A function to be a function must have values. What are the values of a doctrinal function? To answer, consider the facts. In order to interpret the system P , it is necessary and sufficient to replace P 's variables by verifiers of its functions. In doing so, however, we pass from the system P (of propositional functions) to a new system P' of propositions, values of the functions, and it is the new system that has a definite subject-matter and never the old one; so, too, it is P' 's statements, and never those of P , that are true. Just as P' 's propositions are values of P 's functions, so the system P' itself ought to be called a value of the system P . In interpreting P , what happens to T ? Since the propositional functions T are logical consequences of the system P , it is plain that, in passing by interpretation from P to P' , we at the same time pass from the set T of functions to a set T' of propositions, at once values of T 's functions and consequences of P' 's propositions. Evidently T' ought to be called a value of T . Now, since the act of interpreting P carries us from P to P' and from T to T' , it is evident that the same act carries us from B , composed of P and T , to a B' , composed of P' and T' ; and just as P' and T' are, respectively, values of P and T , so ought B' to be called a value of B . This B' , however, is a doctrinal function.

What is the value B' ? Being a body of true propositions about a definite subject-matter, it evidently is a doctrine, and the doctrine is true. Accordingly our question as to what the expression, a value of a doctrinal function, ought to mean, is answered: a value of a doctrinal function is a true doctrine derivable from the function by substituting for its variables verifiers of its postulates.

How many values has a doctrinal function? Let P denote, as before, the system of postulates of the function. The postulates contain at least one variable element, e . Let I denote one interpretation of P , giving rise to one doctrine, D , a value of the function. Let e' denote the verifier of the postulates that was used in obtaining I . The verifier e' is a symbol for a class of things $e'_1, e'_2, e'_3 \dots$ satisfying the relations stated by the postulates. Now let O be any given object of thought. The object O and any given one of the e' 's together constitute a pair of things. Denote by ϵ the class of all the pairs thus obtainable, and let the pairs in ϵ be $\epsilon_1, \epsilon_2, \epsilon_3, \dots$. It is plain that a one-to-one correspondence subsists between the e' 's and the ϵ 's. We agree to say that any set of the ϵ 's satisfy a given relation when the relation is satisfied by the e' 's contained in the given ϵ 's. Hence instead of e' we may use ϵ as a verifier of P . So doing, we get an interpretation I' and therewith a corresponding doctrine D' . As ϵ is different from e' , I' is different (in content or subject-matter) from I , and D' similarly differs from D . Evidently there are thus obtainable as many different doctrines—as many different values of the given doctrinal function—as there are different objects O of thought. We have, therefore, the remarkable proposition that the number of values of any doctrinal function is equal to any given transfinite cardinal number.

A given doctrinal function has infinitely many values not included in the infinitude obtainable in the manner indicated in the preceding paragraph, and it is those not so obtainable that men happen to be most interested in. It will be sufficient to illustrate this twofold fact by means of a familiar example. Let our doctrinal function be that one which consists of the above-mentioned Hilbert system of postulates together with all theorems deducible from them, and let us denote it by DF . By Hilbert the three variable elements are called point, line, and plane. To avoid prejudice these names ought to be replaced by symbols denoting variables, as v_1, v_2, v_3 ; then the postulate, two distinct points always completely determine a line, would read: two distinct v_1 's always completely determine a v_2 . And so on for the remaining postulates. A reader will find it very instructive to make the indicated substitutions. Let us suppose it done. Our doctrinal function DF now discourses about the v 's and

about nothing else. To interpret *DF*, to derive one of its values, to get a true doctrine from it, it is necessary and sufficient to replace the *v*'s by verifiers of the postulates involving them. One set of verifiers is obtained by letting v_1, v_2, v_3 denote, respectively, point, line and plane, allowing these names to have the significance they have had ever since they were described by Euclid in his *Elements*. The resulting value of *DF* is the familiar doctrine traditionally known as the Euclidean geometry of the point, line, and plane.

It is well known that another value of *DF* is obtainable by replacing the *v*'s as follows: v_1 by a triad (x, y, z) of real numbers; v_2 by the system of triads satisfying a pair of equations, $Ax + By + Cz + D = 0, A'x + B'y + C'z + D' = 0$, it being supposed that the equations have a common solution and that in neither of them are all the coefficients zero; by v_3 the system of triads satisfying one such equation.² The doctrine thus arising from *DF* is evidently not a geometry; it is absolutely free of all reference to any idea of spatial extension; it is a pure algebra, the algebra of triads of real numbers.

Given the Euclidean geometry of the point, line, and plane, it is possible to find among its configurations three geometric entities (other than point, line and plane) which will serve as verifiers of the Hilbert postulates and will accordingly give us another value of *DF*. This value, like the former, is a geometric doctrine, but it differs from the former in content. In like manner, from this second value of *DF*—from this second doctrine—a third one can be obtained, and so on indefinitely. Proof of this fact is omitted for lack of room. The fact means, however, that among the values of *DF* there is a denumerable infinitude of doctrines that must be called geometric because each of them deals with a subject-matter involving essential reference to spatial extension. It is true also that among the values of *DF* there is a denumerable infinitude of algebraic or numerical doctrines; and it must be added that *DF* owns a denumerable infinitude of values, or doctrines, that in point of content are neither geometric nor numerical. All these doctrines are isomorphic with one another and with their common matrix, the doctrinal function *DF*, from which they spring. The values of a doctrinal function differ from the function in that they have content while it has not, and in the further fact that the values are true while the function is neither true nor false. The doctrines differ from one another in respect to *kind* of content. This last difference is psychological and not logical.

The relation of a doctrinal function to its values casts a clear light on the relation of form to content, of logic to psychology. We happen to live in a world where an infinitude of psychologically diverse

² A proof that the indicated values of the *v*'s are verifiers of the Hilbert postulates is found in Weber and Wellstein's *Elementare Geometrie*, 2d ed., p. 83.

doctrines are logically one. How unfortunate it would be to live in a world where no two doctrines were isomorphic!

As an interesting corollary to the foregoing discussion it must be said that Hilbert's *Foundations of Geometry* is not a geometry at all, nor is it any other doctrine; it is a doctrinal function having an infinitude of values, some of them geometric, some of them algebraic, some of them neither the one nor the other. The reader will perceive that analogous remarks are applicable to any and every other postulationally established scientific structure involving variables.

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ERROR IN PROFESSOR HOLT'S REALISM

THERE is much that as a realist I have learned from Mr. Holt's realistic writings. On very many points I can not agree with him, but even where this is the case, I generally know why; his clear discussion has always helped to clear away difficulties, and if it has not contributed a satisfactory solution, it makes a satisfactory solution easier to obtain.

In this paper I wish to give my reason for thinking that Mr. Holt has not solved the problem of error. What I take to be his failure confirms me in my conviction that a favorite realistic enterprise of these days is very unpromising. Perhaps the majority of contemporary realists insist that there is nothing in consciousness that *in any way* owes its being to its being in consciousness. Everything that is has its own "independent" being, is "a neutral entity." Some neutral entities may be dependent upon *other* neutral entities, but "one salient fact about them, in so far as they enter into individual experiences (though this is really a fact about experience), is that 'their being experienced makes no difference to them,' they remain what they are!"¹ The greatest difficulty which those who do not hold this view find in it is the difficulty of providing a place for error. Many different provisions have been suggested, and it is Mr. Holt's solution of this difficulty that we are to examine now.

Mr. Holt maintains "that all errors are cases of contradiction or contrariety. One has met error who has experienced that *A* is *B* and that the same *A* is not *B*. But the experiencing is not the significant fact, and that all errors are of knowledge is true merely by definition, since contrariety or contradiction is called 'error' only when it occurs in some person's field of consciousness."² "Every

¹ C. C., *i. e.*, Holt's *The Concept of Consciousness*, p. 103.

² N. R., *i. e.*, *The New Realism*, p. 361.

case of error or untruth is a case of contradictory propositions."³ "Now the problem of error in knowledge is virtually solved, I believe, by this view of the meaning and the being of error itself. Not a great deal more remains to be said. The errors of 'opinion' that were so early recognized, are of course always contradictory propositions—the opinion that '*A is B*' opposed by the opinion that '*A is not B*'; no one ever experienced *B-not-B*, or the lighthouse-star, for these are mere printer's ink. The errors in knowledge are, then, the presence in the knowledge-system of propositions that contradict each other: and such a situation calls for no special explanation, because it is found in most manifolds that contain propositions."⁴ Propositions and contradictions between propositions are all "neutral"; "their being experienced makes no difference to them"; it merely entitles contradictions to the distinctive name of "error" without altering their nature in any wise. Every error then is just a "neutral" contradiction that has got into consciousness.

To understand error then it is only necessary to understand what a contradiction is, and how anything, contradiction included, gets into consciousness.

Any entity gets into consciousness by a specific response of a nervous system to that entity. Consciousness is "a cross-section of the infinite realm of being and a cross-section that is defined by the responses of a nervous organism."⁵ "Now this neutral cross-section outside of the nervous system, and composed of the neutral elements of physical and non-physical objects to which the nervous system is responding by some specific response,—this neutral cross-section, I submit, coincides exactly with the list of objects of which we say that we are conscious. This neutral cross-section as defined by the specific reaction of reflex-arcs is the psychic realm:—it is the manifold of our sensations, perceptions and ideas:—it is consciousness. . . . The knowing process is one form of the response process."⁶ To be "in consciousness" is to be in such a cross-section defined by the specific response of a nervous system; it is to be "included in the class of things which we name a consciousness";⁷ so that, when a nervous system responds specifically to a color out there in space, "*that color out there* is the thing in consciousness."⁸ A contradiction gets into consciousness in exactly the same way; for the nervous system specifically responds to contradictions as well as to any other sort of neutral entities.

³ C. C., p. 264.

⁴ C. C., p. 279.

⁵ C. C., p. 208.

⁶ C. C., pp. 182-183.

⁷ N. R., p. 355.

⁸ N. R., p. 354.

Now what is a contradiction? For our purpose we need only an answer in the way of instances of contradictions. Every "case of collision, interference, acceleration, and retardation, growth and decay, equilibrium, *et cetera, et cetera*, is an instance" of "true cases of (propositional) contradiction among natural laws,"⁹ and all contradictions are propositional. "All counterbalancings, as in cantilevers and Gothic vaultings, are contradictory forces in equilibrium . . . all processes of warming and cooling, of electrically charging and discharging, of starting and stopping, of combining and separating, are processes of which one undoes the other. . . . Nature is a seething chaos of contradictions."¹⁰

The conclusion is simple: "Errors of experience are, then, precisely as we should expect . . . they are the being together in knowledge of contradictory *propositions*, such as have just been mentioned."¹¹

Now Mr. Holt, after defining consciousness, was very careful to try to show that his definition of it deductively yielded "the essential features of mind [*i. e.*, consciousness] as they are empirically observed."¹² As proof of the correctness of his definition he insisted that consciousness as thus defined "coincides exactly with the list of objects of which we say that we are conscious."¹³ He should therefore be willing to submit his definition of error to the same test: Does error thus defined coincide exactly, or even with some remote approximation, with the list of beliefs that we say are errors? Let us see what results when this test is applied.

When "one animal kills another"¹⁴ and I perceive this contradiction, there is an error of perception. A German atrocity, if witnessed, is an untruth—this does accord with the position taken in Wilhelmstrasse! Any one who experiences "disease" has a delusion—this confirms Mrs. Eddy's contention in *Science and Health*! But although German humanity and Christian Science are thus vindicated, natural science comes off rather badly: "The pretensions of many natural scientists that they find no contradictions is uncommonly absurd, because in fact they find little else,"¹⁵ and of course whatever contradictions are found, by that very finding become mistakes. Verily, if Mr. Holt's solution of the problem of error is correct, we need all the comfort that he administers to us:

⁹ N. R., p. 364.

¹⁰ C. C., pp. 275-276.

¹¹ C. C., p. 270.

¹² C. C., p. 185.

¹³ C. C., p. 182.

¹⁴ C. C., p. 277.

¹⁵ N. R., p. 365.

"Contradiction is after all a tame and harmless thing, although a very interesting one!"¹⁶

The difficulties multiply when we pass from perception to memory and anticipation. For, according to Mr. Holt, the nervous system responds specifically to neutral propositions and contradictions in the past and future as well as in the present. Any one who remembers having stopped at some cathedral city in Europe and having seen a Gothic vaulting is twice in error, for both "stopping" and "Gothic vaultings" are contradictions. Every Tommy who, going "over the top," is anticipating a lively scrap is in error, for surely a scrap is a "collision," and a "collision" is a contradiction.

Mr. Holt's philosophy has certainly avoided the crime of explaining error away, a crime which he accuses so many philosophies of having committed. He seems rather to have gone so far out of the way of this felony that he has explained innumerable errors into existence. His theory should be the envy of the maieutic profession, for from the womb of being it continuously and with painless delivery brings buxom errors to birth whose imminent advent no prognostician ever even suspected, or could suspect, seeing that the bones of many of the children are as yet unformed.

And in the case of anticipation still another difficulty is added to complete our confusion. For "ideas of the future may be a trifle more liable to error than ideas of the present or past."¹⁷ Are there then just a few more contradictions in the neutral realm of the future than in that of the past or the present? Or is the nervous system a trifle more responsive to future contradictions than to those past and present? It would seem as if we must choose one of these alternatives, for to be more liable to error in our ideas of the future must mean, of course, to be more liable to get future contradictions into our consciousness. Or—it is indeed risky to suggest it—is it possible that some other conception of error has slipped in here, a conception that Mr. Holt has been theoretically opposing all along, but practically uses because it is one that no amount of explaining error will explain away?

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REVIEWS AND ABSTRACTS OF LITERATURE

The History of European Philosophy. WALTER T. MARVIN. New York: The Macmillan Company. 1917. Pp. xiii + 439.

Professor Marvin's *History of Philosophy* is both a source of delight and a source of regret. It is a source of delight because Pro-

¹⁶ *Ibid.*

¹⁷ C. C., p. 252.

fessor Marvin knows how a history of philosophy ought to be written. It is a source of regret because he has not written such a history. Why he has not written such a history is obvious; it is because that kind of a history can not be written. But Professor Marvin has done the next best thing, he has given a laboratory manual and a bibliography from which the student can construct a history for himself, a history which will come to him as a discovery and not as a presentation.

How should a history of philosophy be written? One should, I dare say, write the history of philosophy much as Plato wrote philosophy. By skilful stage-setting Plato creates a situation in which the truth he wishes to present comes as an impression rather than as a positive statement of fact. So far as is possible within the compass of a very small book it seems to me that Professor Marvin has followed this method with marked success. It may be designated as an attempt to introduce the experimental method into the philosophical sciences. This is accomplished partly in what the author himself says in the way of helpful suggestions, but much more in the excellent selection of bibliographies appended to the end of each section. The bibliographies are, I think, the best and most useful for actual work to be found in any history of philosophy which has yet appeared.

The book is in three parts. Part I. consists largely in historical methodology. Professor Marvin begins in the right place and in the right way, though one wishes that he had said a little more about the philosophy of history and the psychology of learning. And one has the feeling, too, that he has not tied the expository part of his book quite closely enough to the Introduction.

The task which the historian of philosophy sets for himself to perform is to write the history of those general ideas which have been of controlling influence in shaping the affairs of men. That *in some sense* general ideas exist is a fact that no one doubts. And that in some sense, whether true or false, they exert a powerful influence on human affairs is likewise a fact beyond dispute; though it is a rather sad fact that they often attain popular acceptance only after they have outlived their usefulness, and thus become hindrances rather than aids to progress. To investigate these general and abstract ideas, to show how they originate, and to relate them to the various movements and tendencies of the ages in which they appear is the chief task of the historian of philosophy. The successful performance of this task involves a recourse to other sciences as aids, chief of which are anthropology and psychology. Thus Professor James, speaking the language of anthropology, tells us that Kantian categories instead of being fixed and eternal principles are rather

survivals of remote ancestral ways of responding to life. And surely Cornford has made much of early Greek philosophy intelligible by the use of the anthropological method of "collective representation." The introductory part of Professor Marvin's book is concerned largely with anthropology. Such topics as "The Recency of Civilization," "Primitive Thought" and its gradual development into science are those that receive attention.

Much light has also been thrown on historical interpretation by behavioristic psychology. Probably no chapter in any language is more useful to the historian of philosophy than the chapter on "Memory and the Learning Process" in Ladd and Woodworth's *Physiological Psychology*. From the point of view there suggested general ideas are standardized modes of response. We do things in a certain way because others before us have done them that way, not that we imitate the past, but rather because the past survives, is conserved and utilized in the present. I think that Professor Marvin has hardly done justice to the psychology of learning and its importance as an aid to historical interpretation. However, the deficiency in the text is made up for in the excellent bibliography at the close of the chapter on "Changes in Man's Mental Nature Wrought by Civilization."

Parts II. and III. of the book are given to an exposition of the main facts that go to make up our intellectual inheritance. Professor Marvin's method has already been indicated. It is not so much to catalogue the facts as to put the student in possession of such information as will enable him to grasp the facts from his own investigation.

Viewing the book as a whole, there are two things which call for special attention and which differentiate this book from most histories of philosophy. The first is the rejection of the stereotyped division of history into ancient, medieval, and modern. Mr. Marvin has only two divisions, ancient and modern. The ancient period stops with the Church Fathers. So-called medieval thought is subsumed under modern. One wonders if it would not have been truer to fact to have subsumed modern thought under medieval! For this twofold division Professor Marvin has the sanction of many contemporary historians who are leading us to doubt the conception of any very definite medieval period. There is, I think, in the periods usually separated as medieval and modern, enough unity in blood and temperament, in method of approach and interest, and in problems considered, to justify the inclusion of all philosophizing under one grand division.

The second noteworthy feature of the book is the close alignment

of philosophy to the general social, economic, political, and scientific movements of the past. General ideas have too frequently been abstracted from their context and set up to form an independent and detached intellectual tradition. Such logic lifting with its criminal implications has been too often indulged in. Histories of philosophy have been too much histories of *abstract* ideas rather than accounts of the relation of *general* ideas to intellectual progress. For, after all, what the serious-minded student of history wants to know is what influence general ideas have had in the determination of human conduct. For back of statecraft and industries, back of institutions, manners, and creeds lie ideas. The justification of a study of the history of philosophy consists for the most part in the light that an analysis of general ideas throws on an interpretation and understanding of human behavior. In this respect Mr. Marvin has succeeded about as well as one can within the compass of a small volume. The closing pages in particular are noteworthy for the sketch they contain of the development of the ideas of toleration, liberalism, and social democracy.

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The Idea of God in the Light of Recent Research: The Gifford Lectures in the University of Aberdeen, 1912, 1913. A. SETH PRINGLE-PATTISON, pp. 5-417, Clarendon Press.

The Idea of God by Professor Seth Pringle-Pattison is a scholarly addition to the series of lectures made possible by the generosity of Lord Gifford. Professor Pringle-Pattison's work is marked throughout by historical thoroughness, breadth of vision, and sincerity and consistency of purpose.

A brief summary of the main argument of the book—for it is an argument—will explain Professor Pringle-Pattison's position. Starting with Hume's *Dialogues concerning Natural Religion* he finds that "the vague residuum of theistic belief which was all Hume considered deducible from the evidence" (p. 24) is significant indication of the tenacity with which man holds to some form of theism. As he passes from Hume to Kant, the author notices with approval Kant's very different method of approach as "not only sound in itself, but the fundamental contention of all idealistic philosophy since his time" (p. 24). Kant, as is well known, employed the idea of moral value to determine the idea of God. After Kant there arose a philosophical conflict, which Professor Pringle-Pattison calls the nineteenth century duel between idealism and naturalism. In this conflict Professor Pringle-Pattison sees on one side a tendency to set the principle of value in opposition to reason—to its own

destruction rather than reason's—and on the other side a tendency to substitute for scientific theory a fragmentary and partial scientific truth, which becomes, he says, a "scientific incubus." It is largely due to the development of biological science that we have been freed within the last generation from this "bad dream of Naturalism" (p. 66), which he further defines as "the type of theory which so emphasizes the continuity between man and the non-human nature from which he springs as to minimize, if not entirely to deny, any difference between them. It denies at any rate any central significance to human life in the play of cosmic forces. Consciousness is an incident or accident of the universe, which does not throw any special illumination upon its ultimate nature. It arises and passes away: the physical basis of things remains. Naturalism is, in short, a larger, and in some respects a looser, term for what used to be called Materialism" (p. 89).

Under the liberating influence of modern biological thought, we come to a fundamental conception foreign to the older Naturalism, the conception of "*continuity of process and the emergence of real differences*" (p. 103). From this principle it follows that man may be said to be organic to the world. Moreover, Professor Pringle-Pattison insists that in man's experience the true nature of his world reveals itself to him. He says: "I attempted to show the inherent absurdity of the position that, because knowledge is the result of a process, the truth of the report is thereby invalidated. . . . The thing as it is and the thing as it appears are in principle the same fact differently named, because looked at in different aspects" (p. 132).

This principle of man's physical and cognitive relation to the world must be extended, Professor Pringle-Pattison believes, to include his moral nature. There is not, for example, the cleavage between man as moral and nature as non-moral which is a supposition underlying the "Religion of Humanity" proposed by Comte. The author feels that it is a misleading dualism, inherited from Kant, to hold that: "Nature and man are not part of one scheme of things: Nature is just, as it were, a brute fact with which man finds himself confronted" (p. 153).

This dualism is not less pernicious, in his opinion, when stated in terms of Agnosticism: that one member of the dualism is a blank abstraction, to which "no attributes can be ascribed." Furthermore the attempt of Panpsychism to render the terms of the dualism less hostile "by resolving external nature into an aggregate of tiny minds, or still worse, of 'small pieces of mind stuff'" (p. 188) gains nothing and introduces much confusion.

The monism which he establishes takes this form: "Nature as a

whole should be recognized as complementary to mind, and possessing, therefore, no absolute existence of its own apart from its spiritual completion; just as mind in turn would be intellectually and ethically void without a world to furnish it with the materials of knowledge and duty. Both are necessary elements of a single system" (p. 189).

This idealistic position he is at pains to distinguish from Berkeley's position, which he calls "mentalism." "God as immanent—the divine as revealed in the structure and system of finite experience," this, he says is the text and outcome of the argument thus far (p. 215).

He thus allies himself admittedly with "absolutist" writers like Mr. Bradley and Professor Bosanquet, although he finds Mr. Bradley's method of procedure unfortunate (p. 226), however generally sound his conclusions. He agrees with Professor Bosanquet that we reach the Absolute, not from the bare idea of a systematic whole, but by inference from experience, and by taking, as he says, quoting Professor Bosanquet directly, "the general direction of our higher experiences as a clue to the direction in which perfection has to be sought" (p. 232).

In speaking of the nature of our assurance of this position about ultimate reality, Professor Pringle-Pattison makes two very significant admissions. He says that "if we ask what is the nature of our certainty that existence, the world of facts, is ultimately and throughout intellectually coherent . . . we are bound to reply that in a sense it is an unproved belief" (p. 239). He says this postulate of reason may be regarded as a "venture of faith." But, and this is the second significant admission, he holds that faith is the confidence "that thought, when consistent with itself, is true, that necessary implication in thought expresses a necessary implication in reality" (p. 240). This he thinks is the presupposition of all thinking.

The remaining seven chapters do not further advance the main argument, although they add greatly to the completeness with which the thesis of the immanence of God in the world is presented. "The infinite in and through the finite, the finite in and through the infinite—this mutual implication is the ultimate fact of the universe as we know it. It is the Eternal fashion of the Cosmic Life" (p. 315).

This is a theme which will attract many readers, and it is safe to predict for the book a wide public, since it has in addition the attraction of literary charm, and a manner at once scholarly and clear. It is one of the few books in philosophy which will hold both laymen and professional students.

It presents, however, certain aspects which can not be allowed

to pass unchallenged, especially since the author insists in the preface that its chief interest is "neither critical nor historical, but constructive throughout" (p. vii), although to the general reader, as to the present one, its value may seem to lie in its critical and historical undertaking rather than in its constructive phase.

The author has neglected to consider an alternative interpretation to the immanent purposiveness of reality, one suggested by a school of philosophers whom he rather summarily dismisses (pp. 22, 288). Starting from the biological principle which Professor Pringle-Pattison himself finds so important, namely, the conception of "*continuity of process and emergence of real differences*," in the course of the development of life, we do arrive, as he says, at a conception of man as organic to the world. What this organic relation is, I believe Professor Pringle-Pattison essentially misconceives. Granted, as he figuratively says, that "Mind is set in the heart of the world," what does it then mean to say that "it is itself the center in which the essential nature of the whole reveals itself"?

To be concrete, we may think that the woodland path which is guiding a hunter's course is "mind" in the sense that it has meaning for the hunter and demands from him a certain form of behavior. In like manner, to proceed in Professor Pringle-Pattison's method, we can extend the organic relation of man to his world and find in the "heart of the world" moral values, for particular situations call for choice in terms of better and worse, and thus indicate the organic moral relation of man to his environment.

What Professor Pringle-Pattison fails to see is that in these relationships the rôles of man and of nature are not identical. Nature, or the world, is the instrument through which man knows, and through which he chooses, but this relationship is not reversible. *Nature never knows through man, nor chooses through him*, which is the assumed formula of the purposive immanence which Professor Pringle-Pattison finds. It is this erroneously conceived relationship which he elevates to the position of Deity, and it is that clue that he is following in his search for the Absolute, even while he believes he is following an empirical method.

In explaining the nature of the Absolute, Professor Pringle-Pattison fails signally to satisfy the unescapable questions connected with time, truth and freedom. In regard to the absolute experience of time, his best answer in reply to critics of Absolutism like Professor McGilvary is a faulty analogy. "A parent can sympathize with the ephemeral joys and unreasoning sorrows of his child. May we not extend the analogy" (p. 365)? Moreover, his treatment of time makes succession a defect (p. 355) and time itself mere illusion (p. 366).

The relation of the Absolute and truth is no more satisfactory. Truth appears as timeless (p. 347) and as the Whole (pp. 97, 106-7, 109, 154-6, 177, 215, 331-2, 362), and therefore as the ultimately unintelligible.

In regard to freedom, what, finally, are we to think of the value of the idea of the indwelling of God in man (p. 410) and of God as the very texture of our human experience (p. 419)? Does it add to the worth, or to the truth, or even to the beauty of our idea of the human self to think that the individual self is the organ, or instrument, of the Absolute (p. 258)? Again we must remember that the alternative to this inverted instrumentality is to conceive of man as a conscious agent laboring to bring to pass in and through the world the possibilities which shine upon the forehead of that world.

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Human Immortality and Pre-existence. J. M. E. M'TAGGART. New York: Longmans, Green & Company. 1915. Pp. 119.

The two essays comprising this little volume were reprinted in 1915 with slight changes from the author's *Some Dogmas of Religion*. It is evident that the author's belief in the practical concern of the question of immortality at the present time led him to reprint these essays separately. The essay on Immortality offers no positive arguments, but endeavors to remove some of the objections "against immortality which have been based on certain facts of ordinary observation, and on certain results of physical science" (p. 10). The argument hinges upon, first, establishing the thesis of subjectivism, that what appears as matter and as my body "is only events in the life of some conscious being" (p. 50). And, secondly, there is a restatement of the Platonic argument that the Self as conscious is no sum of parts, no composition, and hence can not disintegrate, and there is no analogy anywhere which might lead us to suppose that it becomes simply annihilated. The bulk of the second essay is devoted to the argument that the lack of memory from one life to another is no serious barrier to supposing that individual selves are immortal throughout a series of lives, and that such failure to remember our previous existence in no way impairs the value of preexistence and immortality.

To the present reviewer, the substance of these essays appears singularly removed from the temper and requirements of the world we live in now. I say nothing of the way in which untempered subjectivism leaves most of us quite indifferent. Our world is most concerned with the life and the fate of communities, of nations, and of

ideals; not apart from that engrossing interest can the topic of immortality be fruitfully discussed. Indeed, a brochure, such as that of A. Loisy, *Mors et Vita*, professing no arguments, scornful of the reasoned defense of ancient dogmas, seems to body forth more metaphysical vitality than this clearly written and facile exposition of Mr. M'Taggart.

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JOURNALS AND NEW BOOKS

JOURNAL OF EXPERIMENTAL PSYCHOLOGY. Vol. II., No. 6, December, 1917. *Unidextrality and Mirror-Reading* (pp. 393-415): JUNE E. DOWNEY and EDWIN B. PAYSON. — The proposition that asserts a relationship existing between mirror-reading capacity and unidextrality deserves serious consideration. The question of interest is whether or not degree of unidextrality is bound up with certain mental attributes that, taken together, constitute a somewhat definite mental type. *The Differential Spatial Limen for Finger Span* (pp. 416-430): HERBERT SIDNEY LANGFELD. — The measurement of sensitivity for finger span with a standard of 5 cm. for the two most reliable subjects was .45 mm. when one hand was used. When the subjects were forced to make judgments which had the quality of guesses, there were many more right than wrong answers. *A New Olfactometric Technique and Some Results* (pp. 431-447): HERBERT WOODROW and BENJAMIN KARPMAN. — An odormetric technique is presented and several problems are mentioned which might be solved by its use. *The Memory Value of Mixed Sizes of Advertisements* (pp. 448-465): HENRY F. ADAMS. — When variations are used, repetition is much more effective than size, and greater effectiveness will probably be obtained by using small, varied advertisements frequently inserted than by employing larger ones with less frequency. This is from the theoretical standpoint and takes no account of the added cost of preparing new advertisements. *Children's Sense of Harmonies in Colors and Tones* (pp. 466-475): J. F. DASHIELL. — Tests were made on 212 kindergarten children and on a group of college sophomores. With simple colors the two sexes at both ages show a similarity in preferring certain colors but a real difference in the order in which they are preferred. With tone intervals there are no sex differences brought out. *The Relation between Learning and Retention and Amount to be Learned* (pp. 476-484): V. A. C. HENMON. — The results showed that

retroactive inhibition, forgetting, the distribution of attention and fatigue which have been invoked to explain Ebbinghaus's results are more than compensated for by perseveration, by the time permitted for the setting of associations, and by the greater effort of attention which the longer series calls forth.

REVUE PHILOSOPHIQUE. December, 1917. *La matérialisation de l'énergie* (pp. 472-526): L. ROUGIER.—The writer expounds the difficulties of the dualistic doctrine of the universe. Its chief principle is: "Matter alone is endowed with mass, weight, and structure; energy has neither mass, nor weight, nor structure." The metaphysical problem of the action of the imponderable upon the ponderable, of force on matter, disappears as a pseudo-problem that arose from a fictitious antithesis, as a result of more recent theory and research. The five propositions upon which the dualistic doctrine rested have each been refuted. *Psychologie et logique de Destutt de Tracy* (pp. 527-556): R. LENOIR.—The effort of Tracy "to establish logic on new bases ended only in making logic a chapter of psychology. He determines the conditions of certitude in the spirit of Hume. . . . His psychological theory of judgment appeared to lead to a new theory of truth . . . but Tracy on the contrary made the traditional concepts of verity and of science the implicit premises of his analysis of certitude. . . . He tempers his radical empiricism in order to conform to the exigencies of scientific thought." *Revue critique*. Benedetto Croce, *Filosofia come scienza dello spirito*, IV., *Teoria storia della storiografia*: J. PÉRÈS. *Analyses et Comptes rendus*. R. Anthony, *La force et la droit*: L. DUGAS. J. E. Rigolage, *Auguste Comte, La Méthode positive en seize leçons*: LUCIEN ARRÉAT. *Revue des périodiques*.

Marvin, T. S. *The Living Past: A Sketch of Western Progress*. Third edition. Oxford: Clarendon Press. 1917. Pp. xvi + 296. 3s. 6d.

Rosenow, Curt. *The Analysis of Mental Functions*. Studies from the Psychological Laboratory of the University of Chicago, Vol. XXIV., No. 5. Princeton, N. J.: Psychological Review Company. 1917. Pp. 43.

Russell, Bertrand. *Mysticism and Logic and Other Essays*. New York: Longmans, Green, and Company. 1917. Pp. viii + 234. \$2.50.

NOTES AND NEWS

THE third annual philosophical lecture before the British Academy under the Henriette Hertz Trust was given by Mr. George Santayana, who took for his topic, "Philosophical Opinion in America." An outline of the lecture is given in the *Educational Review* for April, 1918, from which we quote the following paragraph:

"To sum up, the New World had affected philosophy in two ways. First, it had accelerated and rendered fearless the disintegration of conventional categories, a disintegration on which modern philosophy had always been at work, and it had precipitated its successive phases. Secondly, the younger cosmopolitan America had favored the impartial assemblage and mutual confrontation of all sorts of ideas. It had produced, in intellectual matters, a sort of happy watchfulness and insecurity. Never had the human mind been master of so many facts and sure of so few principles. Would such suspense and fluidity of thought crystallize into some great new system? If a genius arose, that vast collection of suggestions and that radical analysis of presumptions which he would find in America might keep him from going astray."

THE Harvard University Press will publish in the fall a work by Professor W. H. Sheldon, entitled "The Strife of Systems and Productive Duality." The book will be a study in objective metaphysics, and will seek to obtain constructive results from the disagreements that have been most vigorous and fundamental—results applicable in practise as well as in speculation, and throwing, the author hopes, some light on the structure of the world.

THE course of lectures on Symbol Logic, which it had been arranged that Mrs. Christine Ladd-Franklin would give before the Department of Philosophy at Harvard University from April 22 to May 1, has been postponed on account of the existing situation. These lectures were given earlier in the season at Columbia University before the Institute of Arts and Sciences.

DR. BUFORD JENNETTE JOHNSON, Ph.D. (Hopkins, '16), has resigned her position as assistant psychologist in the Laboratory of Social Hygiene, Bedford Hills, N. Y., and has accepted an appointment as research assistant in the Bureau of Education Experiments, New York City.

PROFESSOR SAMUEL P. HAYES, of Mt. Holyoke College, will appreciate any gifts of psychological literature to help replenish the losses sustained in the burning of the psychological library on December 20.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

TWO TYPES OF TRANSCENDENTALISM IN AMERICA¹

I. FRANCO-AMERICAN TYPE

THERE is a tradition that New England transcendentalism was "made in Germany." This tradition has been allowed to grow by a double default, both through the supineness of American scholars, and through the positive propaganda of German *Kultur*. It has remained for a Franco-American to dispose of the matter, by showing that the American transcendental movement, with its idealism and individualism, was but part of the greater movement of European romanticism. This was not pan-Germanic, but had its roots in the very characters of Emerson and Channing, of Ripley and Brownson; in the speculations of Coleridge and Carlyle; and especially in the eclecticism of Cousin, Jouffroy, and Constant. Common opinion, again, may assert that these groups—American, English, French—had their source and inspiration from beyond the Rhine, but that remains to be proved. M. Girard, to put it tersely, contends that there was an epidemic of emotionalism breaking out in the republic of letters, a kind of metaphysical measles—but not necessarily German measles. The endemic character of this movement is portrayed under a truly transcendental postulate, namely, a national soul belonging to each country.

The New England leaders had many points of agreement with the great German idealists, but if we add to the list Theodore Parker and Henry David Thoreau, Amos Bronson Alcott and Margaret Fuller, there is suggested a native strain, a peculiar virtue in the soil which fed the tree of transcendentalism. From this kind of speculative soil-analysis, then, one might learn what to expect in the way of a metaphysical crop. So Girard fitly begins his monograph with an introductory study of philosophic thought in America prior to the appearance of transcendentalism. The immigration into New

¹ William Girard, *Du transcendentalisme considéré essentiellement dans sa définition et ses origines françaises*, University of California Publications, Vol. 4, No. 3. Berkeley, 1916. Pp. 351-498. R. M. Wenley, *The Life and Works of George Sylvester Morris, A Chapter in the History of American Thought in the Nineteenth Century*. New York, The Macmillan Company, 1917. Pp. xv + 332.

England is called "*des hommes d'action et des hommes de Dieu.*" The Colonial college is described—and quite properly—as interested more in the evidences of design than the body-mind controversy; in the spiritual relations between man and God, than in the material explanations of man as a machine. But while the process of rationalizing was one-sided, that process led to a marked reaction against Puritan orthodoxy. The very preference for purposiveness was a sign of revolt against an inscrutable ruler, working in a mysterious way his wonders to perform. The deists, then, as rationalists, were veritable forerunners of the reasonable Emerson, yet it can hardly be held that the emotional element, which was so strong in the sage of Concord, was supplied before the day of triumphant deism with its cut and dried arguments. To intimate—as does the author—that the lacking element of sentiment was furnished as early as 1738 by the arrival of George Whitefield, the "revivalist," is going too far. The English evangelist influenced the subsoil of society rather than the upper strata. Read Charles Chauncy's *Seasonable Thoughts on the State of Religion in New England* and see how unseasonable that cool thinker considered the arguments and actions of the "hot" men.²

Girard misses the mark in intimating that there was anything "romantic" in the early eighteenth-century revivalism; he nevertheless offers a suggestive explanation for the later opposition to the French revolutionary romanticism. The wars of the great Emperor—diplomatic conflicts, the embargo against Napoleon—here is a new line of evidence for the Yankee dislike of a "Frenchified" philosophy. Another good point is made in showing how the Scottish philosophy of Dugald Stewart and Thomas Brown failed to satisfy the romantic impulses of the heart. So the generation which bridged the period between the eighteenth and nineteenth centuries, unable to return to the traditional Calvinistic dogma, disilluminated as to the utopias promised by the French revolutionaries, apprehensive of the skeptical *cul-de-sac* of materialism—this generation was ready and eager for another and better philosophy. This was offered by the rising transcendentalism. By this is not meant the religious spiritualism of the Unitarians, which tended to grow more and more vague as time went on, but the real transcendentalism which, accurately speaking, had a new and fresh aspect supplied on the religious side by the writings of Madame de Staël, of Benjamin Constant, of Theodore Jouffroy, and on the philosophic by Coleridge, Cousin, and Carlyle, rather than by Kant, Fichte, and Schelling (p. 387).

² Cf. My chapter on "Early American Philosophers and Divines" in the *Cambridge History of American Literature*, Vol. 1, New York, 1917.

The author at this juncture brings forward his first critical contention, namely, that the failure to distinguish between the religious and philosophic phases of the New England movement has led the historians of transcendentalism to attribute to the Germans an exaggerated influence (p. 383, note 2). H. C. Goddard and the reviewer are here mentioned, but both of these, curiously enough, had meanwhile made his answer. Goddard's new account of Transcendentalism has just appeared in the *Cambridge History of American Literature*. My own account in the summary volume, *American Thought*, was evidently overlooked by the author.³ In this were presented grounds for thinking that New England transcendentalism, as represented by Emerson, had other sources than Teutonic. Girard objects to making Emerson the soul and standard bearer of transcendentalism. If I have done that it is because Emerson's *Nature*, published in 1836, presented in the most compact form "the very soul of the machine." I confess, in that brief study, to having failed to appreciate the French contribution to the movement. This has been well supplied by the present author, who shows that the Gallic eclecticism was a prime incentive to the transcendental belief that, in the human soul, there exist certain intuitions, certain first causes of the entire religious and moral life, independent of all sensible experience and prior to all reason (p. 385). Channing and Ripley and Theodore Parker held these views, so did de Staël, Constant, and Cousin. The similarity between the two groups may be granted, but the crux of the problem is the priority of the *a priori*. When Channing is charged by Brownson with being "answerable for no small portion of the soul-worship which was for a time the fashionable doctrine of the metropolis," the question still remains, at what original fane was Channing first inspired with this worship? Was it German or French, or possibly that of the Scottish intuitional school? As to the first alternative, Girard offers new evidence. Such is the statement from *The Memorial History of Boston* that "long after French became a matter of course, the great German writers remained practically unknown on these shores."⁴ This *History* has been too little consulted by the critics. It contains a mine of information as to the New England conscience and the rise of

³ A similar misadventure has just befallen me regarding Girard. My article on "French Philosophy in America" was printed in the *Revue Philosophique*, November, 1917, only a short time before I discovered Girard's valuable contribution to the subject. And since writing this review there have appeared two more pertinent discussions: H. D. Gray, *Emerson, A Statement of New England Transcendentalism*, Stanford University, 1917; and Albert Schurz, *French Origins of American Transcendentalism*, *American Journal of Psychology*, Jan. 1918, Vol. XXIX., pp. 50-65.

⁴ *Memorial History*, Vol. 3, p. 653.

transcendentalism, and its evidence is further confirmed by such contemporary reviewers as that of the *Christian Examiner* of 1831, who complains that in neglecting the literature of Germany, the Americans have followed the bad example of the English—"treasures of philosophy, history, poetry, and critic, speculative for the most part, having been sealed up from foreign eyes."⁵ The proof from the periodicals is important and goes to push the date of borrowings from across the Rhine to a time after, not before, the Nov-Anglian cult of "the innate knowledge." Germany, it seems—and the evidence is cumulative—did not directly affect leaders like Channing and Emerson. With characteristic Yankee independence—when it came later to their reading the Teutonic originals—they claimed that Fichte and Schelling merely served to confirm what they already had in mind. Such conceit to the Germans may seem "*colossal*," but Girard has cleverly suggested that these very leaders had other sources for their thought, sources of which they were, in a measure, unconscious. A generation before a German dictionary could be bought in Boston, the market was flooded with the works of the Scots and the colleges from Cambridge to South Carolina were filled with the text-books of Stewart and Brown, of Reid and Beattie. But this argument cuts two ways. To prove his central point—the preponderance of French over German influence—Girard is at pains to show how largely the scholars of Paris were indebted to their predecessors of Glasgow, Aberdeen, and Edinburg, Cousin being said to have adopted from Francis Hutcheson his conception of "the moral sense," and from Reid and Stewart his experimental method.

Intuition plus introspection—that which was once Gaelic soon became Gallic—such appears the argument of the author, an argument which seems to detract from his case rather than strengthen it. Now all this valuable material might have been used to a different issue, for it can be shown that the New England transcendentalism was "set" in its local mold before the advent of either French or German craftsmen. The French merely put the *ormolu* about the original vessel; the vessel itself was not made in France, nor in Germany, but was of British-American manufacture. In their historic order the materials were in part derived from Berkeley and his spiritual realism, from the Cambridge Platonists and their archetypes, and from the Lake School with its "spirit far more deeply inter-fused." Further proofs that the French finish came late is shown in Emerson's rather unfavorable opinion of Cousin—a mere eclectic method, he asserts, being too mechanical to catch such "a fly-away" as truth. Then, too, W. E. Channing, despite his admiration for Rousseau, expressed a certain hesitation as to the tendencies of

⁵ Vol. 8, p. 75.

Gallic thought. Yet this by no means implies that, in fear of the French, the New Englanders went over to the Germans. Girard has collected some very illuminating quotations on this point. According to Margaret Fuller, "Kant was thought by evangelical divines to be more dangerous than any French novelist." According to Brownson no works of Goethe "are exempt from the charge of immoral tendency" (p. 404, note 26).

And the discounting of foreign influences may be carried further. While the attitude toward the Continentals was rather provincial, towards the British it was decidedly independent. As the author intimates, Coleridge loosened up the orthodox Calvinists, but had little influence on the transcendentalists, because they were already liberal. In fact they went much further than the transcendental talker of Highgate. At this turn an interesting point is made that Coleridge's obscurity of style could not obscure a certain attachment of his to the traditional Calvinistic doctrines. Indeed, as we take it, the contrast between the vague Coleridge and the precise Channing is typical. When the English rhapsodist concealed his real beliefs, the American rationalist exactly stated his points of disagreement with the old beliefs.

A like argument holds true in regard to German influences. In their attitude toward the early eighteenth-century system, Channing, Ripley, and Theodore Parker manifested the same critical spirit as did Kant toward the cold formalism of Wolff. Around their philosophies were drawn the black lines of dissent; these lines were bitten in like that of the etcher; they were not the indefinite pastel effects of the mere romanticist. This critical attitude is also exemplified in regard to Carlyle. Here Girard supplies the deficiencies of previous historians of transcendentalism by showing that the individualism of Emerson and Thoreau was not due to a blind hero-worship of the author of *Sartor Resartus*. Nor did the New Englanders get their idealism through the diffracting lenses of the Scotchman, and for three several reasons: Kant's system was declared "an absurdity" by Carlyle; Carlyle in turn was declared unintelligible by the Americans; while the latter, earlier in the century, had already received a diluted form of idealism through Cousin (pp. 410-411).

The problem of priority we shall take up subsequently, but the last contention as to the transcendentalist's kinship to the French rather than the German idealism is ingeniously upheld by another line of evidence. This is to the effect that, while the German metaphysics was counted too radical, the French furnished arguments to reconcile faith and reason, religion and science, the gospel and life (p. 470). The problem of the respective weights of foreign influences

is not a simple one. New England transcendentalism was evidently not made in Germany, nor France, nor Britain. As is so commonly thought, it was not a mere mechanical assembling of imported parts, but rather an organic growth, a native plant, fertilized indeed from abroad, but nevertheless rooted in the local soil. Yet even such considerations are not wholly correct. Our philosophic flora can not be divided into two classes, the imported and the indigenous. The problem is like one in comparative botany, where the plants of two divided continents possess resemblances due to the common ancestry of a remote age. So if Emerson appears akin to the Cambridge Platonists, it is because both hark back to the groves of the Academy; and if Channing be called the Fénelon of America, it is because the thinkers of Boston and of Cambrai were alike grounded in the ancient mysticism. Girard has performed a distinct service in pointing out these affinities. The influence, especially, of the French mystics, Fénelon, Pascal, and Madame Guyon, has been but slightly noticed outside of Quaker circles,⁶ so at this point the part played by Madame de Staël is properly introduced. *De l'Allemagne* was almost a family text-book in America and its author an advance agent of the notion that there exists in man a special faculty, primitive, innate, by virtue of which, and without the aid of reason or sensible experience, one gains a knowledge of religious truth (p. 418).

The stage was set in America, yet the actors said their lines but haltingly, before French masters instructed them. Thus it is reported of Channing the elder that he made acquaintance with the master minds of Germany through the medium, first of Madame de Staël, and afterwards of Coleridge. The importance of the rôle of Gallic influence is further argued from the fact that de Staël obtained from Rousseau the notion of a special intuitive religious faculty, while, subsequently, Constant deduced from this the two kindred corollaries that the religious sentiment is universal, and that this sentiment goes through various progressive forms (p. 420). This tracing of the New England romanticism through various intermediaries to its sources is of great significance. It may, however, be overdone, unless one keeps in mind that the reason the New Englanders were so sympathetic was because they themselves had been through the same experiences, and had undergone the same reactions. Like causes brought like effects. Rousseau was what he was because of Voltaire and the Encyclopædists, and Channing, because of the skepticism of Hume and the dry rationalism of Thomas Paine.

The comparative study of sources discounts the Teutonic influ-

⁶ Cf. Rufus Jones, *Studies in Mystical Religion*, 1909.

ences on transcendentalism; so does comparative chronology. The problem of priority I have undertaken elsewhere in a comparison of Emerson's *Nature* of 1836 with his early *Journals*, in order to show that he was but slightly affected by German thought in his main tenets.⁷ Girard does the same thing for Channing through an examination of the current magazines. Such is a statement from the *Christian Examiner* of 1827 that Schiller and Goethe "are still unfamiliar in America . . . more exciting are the books of Constant and Jouffroy." And what holds for the poets of Germany holds the more for the philosophers. As a matter of fact, New England knew almost nothing of Kant, Fichte, and Schelling until the 60's. In the 30's its knowledge came by a double refractive process through English translations of French treatises. Thus the translations of Cousin by Lindberg in 1832 and by Caleb Henry in 1834 led Orestes Brownson to assert that "Germany reaches us only through France." This statement was made in 1837. The following year came Ripley's important *Specimens of Foreign Standard Literature*, consisting of translations of Cousin, Jouffroy, and Constant. And yet in spite of all this, French eclecticism, though it contained fragments of the high German idealism, was not accepted as a whole by the independent Yankees. As Ripley remarked, that which the transcendentalists borrowed from Cousin were the arguments rather than the system, for "the reign of authoritative dogmatic systems has never been firmly established over the mind of this nation: every exclusive faith has called forth a host of dissent."⁸

II. GERMAN-AMERICAN TYPE

By marshalling such evidence, Girard had done great service in disposing of the fable of the preponderant influence of German philosophy upon New England transcendentalism. The later preponderance is another matter; after the Civil War, William T. Harris, in his *Journal of Speculative Philosophy* furnished a direct importing agency for Teutonism. Kant, Fichte, Schelling, and Hegel were read in the original, and through the discussions of the St. Louis Metaphysical Club, the translations in the *Journal*, and the subsequent lectures of Harris and his colleagues, at the Concord Summer School, New England was largely won over to the recent marked sympathy with the German way of thinking. Another valuable line of evidence that the East was inclined toward Teutonism by influences from the West is furnished by the life of George Sylvester Morris of Michigan. It was the well-known translator of

⁷ Cf. *American Thought*, Chapter VI., section 2, "The Sources of Transcendentalism."

⁸ *Specimens*, Vol. 1, pp. 29, 30.

Ueberweg who gave to the country, for the first time, an adequate historical method in philosophy. This method, learned in the 60's through study at Heidelberg and Berlin, furnished the necessary cosmopolitan touch to a previous provincialism. Hitherto, philosophy in America had been like religion, denominational—its aim to uphold this or that point of view, to follow some "guide of life" which was termed true at the expense of other systems. Even the transcendentalists were guilty of this. As we have just seen, they were eclectics of eclecticism itself, Emerson himself being wont to pick and choose from Occident or Orient whatever might be a confirmation to his own beliefs. About the date, then, of our political centennial, the country was ripe for a better method. This was furnished to a great extent by Morris who showed that the historic course of philosophy was an evolution, or rather a portrayal of various schools of speculations with whose divergencies it would be as absurd to quarrel as with the various schools of painting. But now, and perhaps for the first time, an American student was enabled to gain a view of a vast historical canvas, crowded with figures and all with their places in the composition. Of course there were dominating personalities. As in the case of Raphael's School of Hellas, there was a central figure—the master of those who thought. But as Aristotle was flanked on either side by the Pre-Socratics and by the Stoics, himself standing midway in the long line from the early physicists to the later eclectics, so in the modern canvas, Hegel was presented as the commanding figure, and yet even so as vitally related both to his predecessors and to those who might come after him.

A guide into historic vistas—such we take Morris to have been. His chief contribution was not in bolstering up a certain "Christian spiritualism," because Herbert Spencer and the "agnostics" counterbalanced that, but rather in gaining the broad outlook, and then imparting it to others. This gain was made at great pains, for Morris's early outlook was as narrow as his later method was comprehensive. Born in Vermont, he was bred in so strict a sect that he was scarcely affected by the New England transcendentalism of his day and generation. Surprising as it may seem, he does not appear to have been even aware of this "latest form of infidelity," but to have had a blind spot for that which lay to one side of the straight and narrow path of Puritanism. Philosophically, then, his early life was thin and meager. There was about as much body and color in it as in the weathered farmhouse in which he was born. This quality, or lack of quality, lasted on. Morris's personal philosophy strikes one as a thin wash of optimism, a vague water color where the tints have run on the absorbent background of the abso-

lute. It was not his to grasp the "thick crust of reality" as did some of his pragmatic pupils. As Wenley confesses, his "philosophical interests converged upon the highest human ideals, more or less to the exclusion of the order of nature. The positivist attitude, with all its implications, remained alien, even distasteful—one had almost said disreputable—to the end" (p. 180).

Morris's life, in other words, constituted a sort of unfinished Hegelian synthesis. There was the thesis of Puritanism, the antithesis of Teutonism—but never a resolution of the conflicting forces. It is argued by his biographer that a short life prevented this, but it looks rather as if Morris was a transitional thinker, who went through various phases, but never reached full fruition. One of these transitional phases was that experienced at Union Theological Seminary. Leaving the New England home, with "the impress of spiritual qualities," passing through an academy whose principal possessed a "sanctified intelligence," Morris entered Dartmouth at a time when Butler's *Analogy* was still used, but Paley's *Evidences* had been supplanted by Haven's *Mental Philosophy*. As a result of all this his undergraduate essays showed an "utter innocence of historical evidence and method." Inspired by the "family ideals" and by intense abolitionist principles, Morris next entered the northern army before Gettysburg, but being detailed upon detached service, his "fundamental standpoint" received no shocks. The transition, curiously enough, came in the New York Theological Seminary and that not so much from the teaching in the place, as from private meditations. Union had been founded, among other things, to provide a seminary "for men of moderate views . . . to stand aloof from all extremes of doctrinal speculations." Its staff evidently kept to that aim. This is clear from the fact that in Morris's reading lists, which ranged from Aristotle and Ackermann to Mill and Spencer, there is no reference to the French eclectics, though Cousin and Constant were being taught almost around the corner at the old University of the City of New York. As to Morris's two theological teachers, one hindered, the other helped his development. Shedd taught a kind of Coleridgian mysticism, yet not without Calvinistic trimmings. But Henry B. Smith realized his pupil's intellectual perplexity and advised him to forego the ministry and proceed to Europe. The family feared "lest German philosophy should destroy his religious faith" and, because of his extreme reticence, it is hard to judge if it did.

Wenley here offers a very interesting picture of the Germany of 1866—two generations ahead of the English-speaking world in its treatment of philosophical and theological problems and even further removed from the United States than from England (pp.

107 ff.). Thus at a time when Protestant preachers, who filled American chairs of philosophy, were still winning bubble reputations in the "free will" controversy, Vatake had rendered that quarrel meaningless a quarter of a century before. While Morris's *Diary* throws little light on the influence of his foreign teachers, a later article shows that Trendelenburg left the deepest mark, and that in regard to method. Here Morris contrasts American philosophy as so often fragmentary and superficial, as compared with "the grave, comprehensive, universal doctrine" of the historian, rather than the propagandist. Historical investigation in the spirit of "scientific objectiveness" became, therefore, the prime aim of the American scholar on his return to his own country. This was shown by his translation of Ueberweg's *History of Philosophy, from Thales to the Present Time*, a translation which Professor Dewey has pronounced superior to the original because its ambiguities in style and statement were corrected, its bibliography increased, and numerous accounts of the contemporary German philosophers added (p. 121). Despite this masterly translation, Morris did not at once obtain a chair of philosophy, but was obliged to mark time as professor of modern languages and literature at the University of Michigan.

At this point we make bold to point out a "certain weakness in the middle" of Professor Wenley's book. The account of Morris's New England education is interesting and that of his foreign sojourn important, but in describing his own habitat the biographer becomes another "sweet singer of Michigan." We are interested in the life and work of Morris as forming "a chapter in American thought," but with the university that gave him so tardy a recognition we are not especially intrigued. However, by a kind of clever camouflage Wenley makes out quite a case for that seat of learning, once known as the "Catholepestemiad," much as the Grand Rapids furniture people will make one a set of antique furniture to order. It is all very well for local consumption to refer to Morris's colleagues as, variously, a "pioneer chemist," a "protagonist of seminar instruction," the "most eminent quartette of legal teachers in the country," but this remarkable galaxy of Michigan "Argonauts" could not prevent Morris from resigning his chair of modern languages and accepting a lectureship at Johns Hopkins University. Wenley calls this an "episode" and says that Morris was disappointed by the lukewarmness of the Baltimore administration toward philosophy. He, nevertheless, mentions among Morris's pupils John Dewey and Joseph Jastrow and describes what were then new methods of teaching philosophy—the seminar and the Metaphysical Club, whose membership included Christine Ladd, Josiah Royce, and G. Stanley Hall. For former students at Hopkins this chapter opens

a delightful, though somewhat dangerous, topic, namely, the reason for the administration's alleged "lukewarmness toward philosophy." It is intimated that President Gilman desired to secure a "safe man" in philosophy and that at the same time he was blind to the tendencies of "the scientific anti-philosophy" then prevalent in the place. Dr. Gilman, it is true, was a graduate of Yale in its Cambrian period, but, if I may be pardoned a personal reminiscence, I have heard from his own lips the story of the objection of the Baltimore clergyman to the proposed lectures by Huxley on the ground that "Huxley and God could not be in the same room together." As to this debatable topic, however, Wenley offers an ingenious explanation: "Johns Hopkins University and its president in their way, Morris in his, and many others were caught in one of those streams of tendency that are no respecters of persons. Science, at the flood of the Darwinian theory, was sweeping everything before it, and philosophy had become tolerable only as an introduction to scientific method. It was unlucky for Morris, at the moment that systematic philosophy—the only philosophy worth the name *wissenschaftlich*—had made but little impression in the United States, and that, as a result, his critical attitude towards the premature generalizations associated with science was taken for a reaction to Protestant dogmatics; he was supposed to be essentially inimical to scientific research, not merely in physical, but in humanistic affairs. Naturalists did not like his "transcendentalism," historians and economists deemed him a "romantic." Original research was taken to imply measurement and numbering of "objective" things; the extensive preliminary requirements for successful advance in philosophy were not provided or, at least, not emphasized and, as is altogether likely, had not been understood" (p. 149). Morris may have been a misunderstood genius, yet in strict accordance with his very historical method, his biographer should have no quarrel with those who were antipathetic to the idealism for which he stood. As Stanley Hall remarked, Morris, early in the 80's, "had developed a good way toward the Hegelian position, and so we did not agree" (p. 153).

It has been said that the Hegelian habit, once contracted, can never be cured. This seems true of Morris who "innocently accepts the transcendental order" and apparently remains in the pre-scientific stage. So he was not only sympathetic with the British Hegelians, and tended to view the antithesis between the noumenal and the phenomenal as if it were fixed, but also insisted upon an inevitable collision between natural science and spiritual aspiration (p. 243). It would be interesting to speculate what would have happened to Morris had he accepted the chair of philosophy at Cor-

nell where Andrew D. White portrayed the *Warfare of Science against Theology*. The outcome of the latter work was to elevate science at the expense of religion; whereas Morris disparaged science to bolster up religion. His attacks on the "metaphysics of materialism" appear, if not antiquated, at any rate overdrawn. But there was a certain excuse for this. The tremendous system of Spencer was one that would appeal to the public, as was shown by the financial success of the synthetic philosophy in America; but the easy agnosticism of this cloud-compelling Zeus must have been peculiarly irritating to one who was by nature vitally interested in the apologetics of spiritualism. It was then as obvious as a litmus paper test to expect a specific reaction in Morris's mind when he undertook the Ely lectures at Union Theological Seminary. This foundation, whose primary aim was to discuss "the nature and need of a Revelation," dated from 1865, a time when pietism and rationalism were at a draw. Yet eighteen years afterwards, despite the spread of Darwinian naturalism,⁹ Morris could make bold to assert that "the human intelligence . . . has for its first or immediate object, the physical universe, as a language, the true reading of which brings it to the present knowledge of the divine Word, as the truth, or absolute causal reality of the universe."¹⁰

All this "defining the Absolute for a dollar," as Wenley suggests, shows two things—the essentially theosophical and mystical nature of Morris, and his ignorance of positive science and of its methods. It might also explain a third point—the recoil of some of Morris's pupils away from high idealism towards the humbler methods of pragmatism and neo-realism. Since Morris's day something has happened in American philosophy, something came to an end, namely, the metaphysics of supernaturalism.¹¹ Or, as James would put it, we have overpassed the standpoint of "cold storage truths." To us then, there hangs about Morris's metaphysics that stale air of sanctity often found in the parlor of a New England farmhouse, a room which represents in itself a "closed universe," without fresh air and sunlight—a room whose faded photographs, wax flowers, and hair-cloth sofa all have their analogies with the pietistic Hegelian's unreal entities, stiff formulæ, and slippery syllogisms.

WOODBIDGE RILEY.

VASSAR COLLEGE.

⁹ Cf. Morris's *British Thought and Thinkers*, Chapter XII., Chicago, 1880, where he calls Spencer a mere Pre-Socratic.

¹⁰ P. 275. Also for a recent description of this Neo-Hegelian ideal, Cf. G. H. Sabine "Philosophical and Scientific Specialization," *Philosophical Review*, January, 1917, p. 19.

¹¹ Cf. W. T. Bush, *Constructive Intelligence*, this JOURNAL, Vol. 14, p. 505.

FREE WILL

THE problem of free will appears to be a problem only because, as Bergson well says, the conditions are not clearly stated. It appears to the writer that the difficulty of stating the conditions is due to a hazy idea of the meaning of cause and effect.

The concept of cause and effect is based upon the experience which the intellect defines as "a succession in time." However, before this experience leads to a belief in cause and effect it must be repeated. The oftener it is repeated the more firmly do we apply to it the idea of cause and effect. Especially does this idea become firmly attached to "a succession in time" if we can repeat the succession at will in a laboratory. Really all that science means by cause and effect is a succession in time which can be repeated.

In consciousness, however, while there is what the intellect defines as a succession in time, there is no such thing as repetition. The proof of this is simple. We can do the same thing twice, but the consciousness of the doing is never the same because the memory of the first time is present the second time. It follows that in consciousness there is no such thing as cause and effect in the scientific sense because nothing is repeated. Consciousness is a continual creation of the unique in real time.

The object of science is correct prediction and this can occur only when there is a repetition of events. You can not predict the result of a first event, you can only observe that result and use your observation as a basis for predicting the result if the event is repeated. But, as in consciousness there is no repetition there can be no prediction, and this is what is meant by free will.

From the intellectual point of view a moment of consciousness is caused in the sense that it is preceded in time by conditions which determine it, but as these conditions are never repeated no prediction can be based upon them because prediction is impossible without repetition.

Hence the opposite views of free will seem to be due to two different concepts of the meaning of cause and effect. If we say that cause and effect means simply what the intellect defines as a succession in time certainly consciousness is caused and there is no free will. If however, we say, as science does say, that cause and effect means a succession in time which can be repeated, then, as certainly, consciousness is not caused and there is free will.

Looking at the matter from the later point of view, it is of course evident that few of our *acts* are really free, most of them being determined by habit or external stimuli, both of which conditions can be repeated.

A. A. MERRILL

LOS ANGELES.

THE DEFINITION OF INFINITY

WE are again reminded by Professor Cobb¹ of the importance of coming to some conclusion with respect to the validity of the modern conception of the mathematical infinite. As my contribution to the discussion I offer some considerations in support of the contention that the "New Infinite" as defined by Dedekind and Cantor is a doubly ambiguous conception. This double ambiguity is disclosed by an examination (1) of the notion of "similarity" or "one-to-one correspondence," and (2) of that of "totality," as these notions are employed in the definition. Let us consider each of these points in turn.

1. *Infinity and one-to-one correspondence.*—The definition of an infinite aggregate or system given by Cantor and Dedekind depends upon the notion of "equal power," "equivalence," or "similarity." "Aggregates with finite cardinal numbers," says Cantor,² "are called 'finite aggregates'; and all others are called 'transfinite aggregates,' and their cardinal numbers 'transfinite cardinal numbers.'" The infinite or "transfinite" numbers and aggregates are thus defined negatively, as those which are *not finite*; and we must, accordingly, seek the distinguishing mark of the finite number. This is contained in the theorem that "If M is an aggregate such that it is of equal power with none of its parts, then the aggregate (M, e) , which arises from M by the addition of a single new element e , has the same property of being of equal power with none of its parts." This theorem is used in establishing the fundamental properties of the "unlimited series of finite cardinal numbers," and thus becomes a virtual part of their definition. Finite aggregates, accordingly, are never equivalent to any of their parts, while infinite aggregates may be. "The first example of a transfinite aggregate," continues Cantor, "is given by the totality of finite cardinal numbers."

Dedekind's definition, although verbally different, is in substance the same. It runs as follows: "A system S is said to be *infinite* when it is similar to a proper part of itself; in the contrary case, S is said to be a finite system."³ The point is, of course, not merely that two systems which are assumed or already known to be infinite are similar or one-to-one correspondent, *even if* one is only a part of the other. That such a similarity or equivalence of whole and part is to be found was the very puzzle that had perplexed the older mathematicians. The achievement of Dedekind (if it be a genuine achievement) is rather the reversal of the method of attack. The

¹ This JOURNAL, Vol. XIV., p. 688.

² *The Theory of Transfinite Number*, Jourdain's translation, p. 103.

³ *Essays on the Theory of Numbers*, Beman's translation, p. 41.

“similarity” of a whole to its “proper part” is no longer merely an observed fact, nor is it for him an inference from their infinity; but infinity is now *defined to be* such similarity.

In Dedekind’s terminology every system is a part of itself; while a system which contains some, but not all, of the elements of a given system is a *proper* part of the given system. Any two systems or aggregates are said to stand to each other in the relation of “one-to-one correspondence” when for each element or term of one there is one and only one term of the other. Mr. Russell’s illustration is familiar: “The relation of father to son is called a one-many relation, because a man can have only one father, but may have many sons; conversely, the relation of son to father is called many-one. But the relation of husband to wife (in Christian countries) is called one-one, because a man can not have more than one wife, or a woman more than one husband.”⁴

Now it is easy to show that these definitions contain a very grave ambiguity. For *whenever a series is found that is similar to, that is to say, in one-to-one correspondence with, a proper part of itself, the series in question may be shown to be in several other kinds of correspondence with the same part*; in fact, any sort of correspondence that one pleases to look for may be discovered; and, furthermore, any scheme or plan of correspondence may be shown to be just as rigidly *determined by law* as any other—specifically, as the scheme of one-to-one correspondence, which some partisans of the “new infinite” have too hastily assumed to be *the* relation in which the two series eternally stand.

Consider as a typical case the favorite, not to say hackneyed, example of a part which is similar to its whole, namely, the series of even numbers in relation to the series which contains all the numbers, odd as well as even. By definition, the series of even numbers is a proper part of the series of whole numbers, and yet by the law that each of its terms is a number twice the corresponding term of the series of whole numbers, it is required to stand in one-to-one correspondence with that series; and, therefore, by Dedekind’s definition, the series of whole numbers is an infinite system. But we find that any other correspondence than the one-to-one may be seen, if we wish to see it. This may be exhibited thus:

- I. (W) 1, 2, 3, 4, 5, 6, ...
 (P) 2, 4, 6, 8, 10, 12, ...
- II. (W) 1, 2, 3, 4, 5, ...
 (P) 2,4, 6,8, 10,12, 14,16, 18,20, ...

⁴ *Scientific Method in Philosophy*, p. 203.

III.	(W)	1,2,	3,4,	5,6,	7,8,	...
	(P)	2,	4,	6,	8,	...
IV.	(W)	1,2,	3,4,	5,6,	7,8,	...
	(P)	2,4,6,	8,10,12,	14,16,18,	20,22,24,	...

Case I. is the case which has been supposed to be *the* situation. In the other three cases we have respectively a one-to-two, a two-to-one, and a two-to-three correspondence. Now these other sorts of correspondence are determined by clear and definite rules of exactly the same kind as, although a little more complicated than, the rule which determines the one-to-one correspondence. In Case II. let the rule be that the second of the two terms paired with any one term of the whole series shall be four times that term; in Case III. the second of the two terms of (W) is the same number as the one term of (P) with which the two terms of (W) are bound up; in IV. every two terms of (W) are bound up with three of (P), and the rule determining the correspondence is that the last term of any given group of (P) shall be *three* times the last term of the corresponding group of (W). Now it is necessary to insist that the (P) of I., of II., of III., and of IV. is exactly the same series; for the "proper part" 2, 4, 6, 8, 10, *etc.*, is the part that is considered in each case. It has been shown, then, that the whole series stands to this proper part in these *various* relations of correspondence *in exactly the same sense* in which it stands to it in the relation of *one-to-one* correspondence.

The demonstration that this is true of any "proper part" of the series of whole numbers that one chooses to consider, as, for example, the series of multiples by 3, 4, *etc.*, or the series of the squares, of the cubes, *etc.*, of the terms of the natural series of numbers, must be left to the ingenuity and patience of the reader. He will find that the correspondence of a whole and a proper part of itself, which has been taken as the essential notion in the new definition of infinity, turns out, when more closely scrutinized, to be a nose of wax; it can be bent in any direction that one pleases.

What then do we mean when we say that two series are "similar" to each other? Do we mean (1) that the whole "system" and its "proper part" stand to each other in a relation of one-to-one correspondence *and in no other*, or (2) that they are in one-to-one correspondence and *also* related to each other in accordance with *other* schemes of correspondence?

This ambiguity in the meaning of "similarity" has given rise to some clever juggling with the conception of *equality*. Thus Professor Keyser assures us that it is a great error to suppose that the whole-part axiom is universally valid; that it ought rather to be considered as a "logical blade" which divides the finite from the in-

finite. He even discovers an analogy to the doctrine of the Trinity in the relation of the even numbers *E*, the odd numbers *O*, and the rational fractions *F*, to the manifold of all the rational numbers *M*; for "we have here *three* infinite manifolds *E*, *O*, *F*, no two of which have so much as a single element in common, and yet the three together constitute one manifold *M* exactly equal in wealth of elements to each of its infinite components."⁵ The analogy manifestly depends upon a definition of equality: to be "equal in wealth of elements" is the same thing as to be "similar." So far as I know, Mr. Bertrand Russell has not shown any interest in Trinitarian apologetics. But like Professor Keyser he identifies "equality" with "similarity" or one-to-one correspondence. He tells us that without referring to the census we know that the number of English wives is exactly equal to the number of English husbands.⁶ Professor Royce illustrates the same point by referring his readers to a company of marching soldiers, each of whom is seen to carry *one* gun. Even without counting, he says, we know that the number of soldiers is equal to the number of guns.⁷

The difficulty is that neither husbands, wives, soldiers, nor guns are infinitely numerous; and, while one-to-one correspondence may be accepted as a criterion of equality or even regarded as the meaning of equality in the case of *finite* collections, when we seek in the manner suggested by these examples to assure ourselves of the numerical equality of infinite series, the argument breaks down. If "equality" is no more than a relation of one-to-one correspondence, then of course by Dedekind's definition of an infinite system, such a system must be *equal* to a part of itself. The entire series of rational numbers is then "equal in wealth of elements" to the series of odd numbers or to the series of even numbers, and each of these to the other. But, in view of the fact, pointed out above, that when infinite series are found to be in one-to-one correspondence, they may also be shown to be in any other sort of correspondence that one chooses to look for, there is no more reason for regarding such series as numerically equal than there is for saying that one is twice or three or any number of times as rich in elements as another; if a one-to-one correspondence proves that two given series are equal, then a *two-to-one* correspondence ought to prove that one is *twice* the other, *etc.*; and if we were able at will to shift our point of view so as to see two soldiers carrying one gun or one soldier carrying two guns, or if the discovery of monogamy, polygamy, or polyandry in England depended merely upon the caprice of the observer, then we should

⁵ *The New Infinite and the Old Theology*, pp. 85 ff.

⁶ *Scientific Method in Philosophy*, p. 203.

⁷ *Hilbert Journal*, I., pp. 37 ff.

certainly know nothing whatever about the relative abundance of guns and soldiers or of husbands and wives.

The source of the confusion is clear. If "similarity" is to be regarded as logically equivalent to "equality," then it must be interpreted in our first sense; that is to say, similar collections must be understood to be such as stand to one another in the relation of one-to-one correspondence *and no other*. In the nature of the case, however, no two infinite collections can be shown to be similar in this sense. Accordingly, when the method of comparison which is now in question is carried over from finite to infinite collections, similarity must needs be understood in the second sense, as meaning one-to-one correspondence along with *other* relations of correspondence; but it is evident that in this sense similarity is not the same as equality.

It is, then, highly desirable that the champions of the "new infinite" should tell us clearly in what sense they understand the notion of "similarity." "A system *S* is *infinite* if it is similar to a proper part of itself." Does this mean that the whole and the proper part are in an *exclusively one-to-one* correspondence, or that the one-to-one correspondence is only one of the many relations of correspondence which subsist between the given collections? If the former is the correct interpretation of the definition, then, so far as I am aware, no genuine example of an infinite system has ever been adduced. At any rate, no example of an infinite system is revealed by an examination of the mutual relations of the various series of cardinal numbers. Accordingly, if this is the meaning of "similarity," the class of all classes each of which is similar to a proper part of itself is a *class without any members*. On the other hand, if the latter is understood to be the meaning of the definition, if the whole and its proper part are in a relation of one-to-one correspondence, and *also* in relations of one-to-two correspondence, two-to-three correspondence, *etc.*, then, to be sure, there *are* infinite systems. But then we are not justified in regarding the subsistence of a one-to-one correspondence between two infinite series as a proof of their equality; and, unless the fact that the part in question is a *part*—that is to say, is included within, but not coextensive with the system to which it belongs—be taken as evidence that it is *less* than its whole, it is meaningless to speak of any quantitative comparison whatsoever between the whole and a proper part of itself.

2. *The New Infinite and the Notion of Totality.*—In whichever sense the notion of "similarity" be taken, the "new" definition of infinity is logically implied by the old definition of the infinite as the *endless*; for any endless series is *inexhaustible*, and between two inexhaustible series it is always possible to exhibit a one-to-one correspondence, or any sort of correspondence that one chooses to look for,

inasmuch as, however far the pairing of terms or the correlation of groups may be carried, there can never be any dearth of partners or of groups of terms in either series. Accordingly the so-called new infinite may not unfairly be said to be no more than the old infinite in disguise. Consequently it can not be supposed to escape the logical difficulties which beset the older notion. In particular the new formulation does not remove the self-contradiction from the idea of a "realized infinite." This conception remains open to the fatal objection urged by Renouvier⁸ that "the completed synthesis (*som-mation effectuée*) of a series which by hypothesis is endless (*inter-minable*) is a contradiction in terms."

The new definition has, indeed, the appearance of avoiding the self-contradiction in the conception of the realized infinite. Thus Dedekind's "discovery" is hailed by Keyser as "one of the greatest achievements in the history of thought."⁹ In the opinion of Russell, the new notion of infinity clears up all the puzzles in the conception of the continuum, and makes it unnecessary to seek for a finitist theory of the world.¹⁰ And the new definition was eagerly grasped by Royce to save his Absolute Self from the criticism of Bradley. The New Infinite is supposed to deliver us from that *bête noir* of philosophical speculation, the "endless regress," and, by enabling us to take an infinite multiplicity all at once instead of term by term, to make possible the conception of a *totum simul*.¹¹ In short, the New Infinite would seem to possess an almost magical virtue.

Now I believe that this apparent victory over the self-contradiction residing in the notion of a realized infinite is a delusion. The self-contradiction has only been concealed—hidden away within the definition of infinity. The surprising dialectical potency of the "New Infinite" results from an ambiguous employment of the notion of totality. For when Dedekind speaks of the endless series of cardinal numbers as a *system* he tacitly imports the notion of totality, and consequently (if the term "totality" is understood in its usual sense) of finitude, into his definition of infinity; since we naturally think of a system as a whole—as a somewhat that is completely given. That the contradiction, instead of being overcome, has merely been concealed from view, appears even more clearly when we consider the phraseology of Cantor. As we have seen, the first example of his "transfinite" aggregate is the "totality of finite cardinal numbers." But he himself speaks of "the unlimited series of finite cardinal numbers"; and, if the series is *unlimited*, by what right is it called a totality?

⁸ *Critique de la Doctrine de Kant*, p. 35.

⁹ *Hibbert Journal*, Vol. II., p. 540.

¹⁰ *Scientific Method in Philosophy*, pp. 130, 155.

¹¹ *The World and the Individual*, Vol. I., Supplementary Essay.

Such an employment of terms can only be justified by assuming a peculiar definition of the word "totality." Thus when Cantor speaks of a "totality," he may mean no more than that the collection or series denoted by the word is *determinate*, i. e., is so defined that it is in principle possible to tell whether or not it includes any given term or collection of terms. For example, we can always tell whether or not a given number belongs to the series of even numbers or to the series of odd numbers; and, inasmuch as these series are thus logically distinguishable, there is a sense in which each of them, though by the law of its formation an endless series, is nevertheless a definite and thinkable unity.

Now there are no doubt many such logically distinguishable types of endless series; and it is of course perfectly legitimate for the mathematician to study them, and even to call them "transfinite numbers," if he wishes to employ that terminology and is not himself led astray by it. The difficulty is, however, that some of the more enthusiastic champions of the New Infinite, those especially who have attempted to apply the conception to the solution of problems in theology and philosophy, have given it, at least by implication, a meaning which from the point of view of logic it can not have. They have, in short, forgotten the equivocality of the notion of "totality." For the infinite—whether new or old—can not be regarded as a somewhat that is actually existing, but only as a scheme or plan that is in process of realization; because, understood as an actually existing somewhat, it would be a totality, not merely in the sense of a series defined sufficiently for purposes of identification, but in the sense of a whole, no part of which would be lacking.

In accordance with Professor Cobb's rule of procedure we have been asking about the new definition of infinity, not only, "Is it true?" but also, "What does it mean?" Or rather we have been asking what it must be understood to mean if we are to accept it as logically possible. The same method of procedure must be applied to the definition suggested by Professor Cobb: "A group is said to be infinite when, if a is any finite number that has been chosen, the group has a subgroup of a elements." The "infinite group is chosen before the number a , and the subgroup is chosen after the number a ." But what is meant by saying that the "group" is "chosen," "fixed," "given," etc.? This, it seems to me, is the crux of the whole question. The "group of finite integers," for example, is a definite unity or totality only in our narrower sense, namely, only in the sense that it is so defined as to be distinguishable from other groups. The "group" which is infinite by the proposed definition is then merely a series which is shown by the proposed test to be an *inexhaustible* and, therefore, *endless* series. And this, I take it, is the manner in

which the definition is interpreted by Professor Cobb himself; for he tells us in the more recent of the two articles referred to above that Kant's "indefinite" is the mathematical infinite.

Thus interpreted, the New Infinite is indeed logically unassailable—and also perfectly harmless. It does not help in the solution of any of the problems of philosophy or theology. It is a shorn Samson.

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REVIEWS AND ABSTRACTS OF LITERATURE

The Validity of the Religious Experience. GEORGE A. BARROW. Boston: Sherman, French & Company. 1917. Pp. 247.

Since the pioneer work of Starbuck and James in the psychology of religion, many similar studies have been made of the religious experience and of religious belief. An older and still a common method is the metaphysical approach to the philosophy of religion, in the effort, first of all, to establish the existence of God and the other objects of religious belief. Dr. Barrow has united the more recent scientific attitude with the older metaphysical method in a philosophical study, but in a study of the religious experience itself. By examining this experience, he seeks to show that the experience has within it positive theological implications. Whether or not his arguments for "the validity of the religious experience" seem cogent, the book deserves a careful reading by all those interested in religious problems.

The so-called religious experience is a fact. Some persons, at some times, unquestionably have the experiences that they call religious experiences. Dr. Barrow begins with the religious experience as a fact, and inquires into its source. "The validity of an experience involves . . . two things, an implication as to the cause, and the truth of the implication" (p. 17). "The claim of religion that it is a relation to a superhuman object or world" (p. 184) may be false, since the cause of the experience may be merely physiological. The religious experience may be only emotion, plus a (false) belief as to the source and significance of the emotion. This question of the truth or falsity of the belief regarding the source of the religious experience is a central one. Though Dr. Barrow says, "It is not belief that we are concerned with, but the religious experience" (p. 157), he elsewhere (p. 41) speaks of the "faith" in a superhuman being which the religious experience contains—and faith is a variety of belief. The "claim of religion" (p. 184) is also a form of belief, otherwise it would not be subject to the categories of truth and falsity.

In the midst of current efforts to define religion without bringing in belief in some form of superhuman reality (such efforts, *e. g.*, as Ernest Crawley's in *The Tree of Life*, Irving King's in *The Development of Religion*, and that of positivism), Dr. Barrow's insistence that there is always an objective, superhuman reference in the religious experience is timely and is justified by the facts of the history and the psychology of religion. Religion can not be defined apart from belief in superhuman or supernatural realities. Dr. Barrow shows by a sketch of various historical types of religion, from animism to Buddhism and mysticism, that "all agree in placing the source of the experience outside of that experience" (p. 152). Buddhism is sometimes regarded as an atheistic religion, but Dr. Barrow correctly points out that the Nirvana of Buddhism is the opposite of nothingness, and that "the Goal of [Buddhist] endeavor is something beyond the moral manifestations of humanity" (p. 157). Even the experience of the mystic points beyond itself. "The final state, which for the mystic is true religion, consists in the absorption of his narrow consciousness in something wider" (p. 106). "For the mystic . . . the source or object of religion is believed to lie beyond the limits of human personality" (p. 160).

Though the religious experience has reference to some external, superhuman source, it does not follow that the implication is of a logical sort and actually holds. There may be merely a *belief* in an external source, and the belief may be false. It is true that "the [religious] experience is not sufficient to give existence to itself by itself" (p. 130), but the causes may be purely physical and social. Recent studies of the Freudian type, which interpret the religious experience as sublimated sex impulses, and McDougall's discussion of the religious sentiments—admiration, awe, and reverence—in terms of simple emotions that are parts of the primary instincts, lend support to the view that the religious experience is a form of emotionalism associated with a belief that the cause of the emotional state is superhuman and divine. Further, the cause of this belief itself may be only tradition, early training in religious doctrines, and the like. That is, the religious believer may bring his interpretation, *i. e.*, his belief as to the external, divine cause, *to* the religious experience, instead of deriving the interpretation *from* the experience. This is a common fallacy in the philosophy of religion—the fallacy of falsely attributing an experience to a superhuman source when the cause is physiological merely. "Even a dream has a source outside of itself, and religion must so far be given the same character" (p. 108), says Dr. Barrow. Indeed, for all that he proves to the contrary, religion, unhappily, may have only this character—of a dream. The things

seen in a dream are not real. The cause of a dream is physiological; while, as Dr. Barrow himself suggests (p. 17), the task of a positive philosophy of religion is to establish the non-physiological as opposed to the physiological origin of the religious experience.

In his insistence that the religious experience implies a superhuman object, Dr. Barrow fails to distinguish implication, which is a logical matter, from the psychological state or act of *belief* that such implication obtains. There is nothing in the nature of the religious experience itself that logically implies a divine source, but it is true that a *belief* in a divine source is coextensive with the religious experience. It is possible that the belief may be true, but a metaphysical account of the universe such as Royce's or Eucken's would be necessary to establish the truth of the belief. In the absence of a conclusive metaphysical proof of the truth of religious belief, the weight of scientific evidence is on the side that claims a physiological origin for the religious experience, and that would brand the interpretations given by those having the experience as instances of the fallacy of false attribution. It is not that "the religious experiences imply a source exterior to themselves" (p. 104), *i. e.*, a non-physiological source, but simply that a belief in such implication obtains. Further, the source of the belief may not reside in the object of the belief (and of course *can not* if the object is not real), but in one's social environment. In fact, it is easier to explain the occurrence of belief than of its opposite, unbelief. Belief is the primitive attitude of credulous childhood to every assertion that is made.

Dr. Barrow, like many other writers in the philosophy of religion, would escape an otherwise inevitable confusion if he would explicitly distinguish between belief, as a psychological entity, and the object of belief. The belief in God is one thing; God, the object believed in, is another matter. Religious belief, *as* belief, is a purely psychological matter not unlike political or mathematical belief. The differentia of religious belief resides in the nature of the object believed in. Though people believe in God as the giver of their religious experiences, God may be an imaginary object, and the experiences may be explainable upon a naturalistic basis. If the distinction were kept clear between belief and the object of belief, the statement that "religions would not be religions, not exist as religions, without the outside source" (p. 118) would be changed to the statement that religions would not exist without the *belief* in this outside source.

Dr. Barrow tends at times towards what James called the fallacy of "vicious intellectualism." Thus he argues (pp. 178-180) for superhuman forces working in man, by limiting the human individual to narrow bounds by definition, and then calling superhuman any

manifestations that are beyond the human *as defined*. It is by no means true that natural man's "intellectual life is centered on the physical existence" (p. 178), at least not in all cases, and can not be made true by definition. Interests in ideals of goodness and beauty and truth, for example, are not signs of the superhuman in man, but are manifestations of the working of man's natural equipment of instincts and habits.

The pragmatic fallacy, so common in religious literature, is not entirely avoided in the book. This fallacy consists of the failure to distinguish truth from value, or of the assertion that beliefs which are valuable must, therefore, be true. Value has one definition, and belongs to the subject-matter of the value sciences; truth means another thing and belongs to the subject-matter of logic and epistemology. There is no *a priori* reason why they should always coincide. There is, on the other hand, empirical evidence to the contrary. Many primitive religious beliefs that are obviously false have possessed definite value in the course of human evolution, and in the higher religions there are beliefs, such as some of those fostered by the Catholic church, that have value for the believers though they are probably not true. Dr. Barrow commits the pragmatic fallacy when he says, "Validity thus becomes not merely a matter of logical accuracy, but of practical value" (p. 245).

Among the chief merits of a book in philosophy or in philosophy of religion are the introduction of an original view-point and the stimulation of thought and criticism, both *pro* and *con*. *The Validity of the Religious Experience* possesses these merits in a high degree.

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Science and the Nation: Essays by Cambridge graduates with an introduction by the RIGHT HON. LORD MOULTON. Edited by A. C. SEWARD. Cambridge: Cambridge University Press. 1917. Pp. xxii + 328.

This is a little book of popular essays concerning the work now in progress in a number of branches of science. The book apparently confesses by its rather defective binding and lack of index its own merely ephemeral character. But its purpose transcends any present emergency. That purpose is to bring to the English people a realization that the contributions which applied science makes to national defense and social well-being are not possible, save on the foundation of a highly disinterested following out of pure, theoretical science, along whatsoever pathways the latter may lead. The de-

tails of these essays are ephemeral in the sense in which the present work of science is ephemeral, striving towards the transcending of itself in the better science of to-morrow. But the main thesis of these essays will be as true to-morrow as it is to-day.

For the student of philosophy, the book contains a review of diverse fields of science in their present status, such as ought to be of considerable value. The essays which preach and draw the moral, even such an able one as that by W. H. Bragg on "Physical Research," are on the whole less effective than those which, like that by W. Rosenhain, "The Modern Science of Metals," say in effect, "Behold, this is what we have done, draw your own conclusions." Some of the essays are broad reviews of a whole science, as botany or geology or experimental medicine; indeed, that by E. W. Hobson on "Mathematics in Relation to Pure and Applied Science" attempts rather too much in the allotted space; others are on particular problems, as, for example, the interesting suggestions by W. H. R. Rivers on applied anthropology, "The Government of Subject Peoples." The only essay which reflects much of the animus of the present war is the opening one by W. J. Pope, entitled "The National Importance of Chemistry," but partly on that account it is by no means the least entertaining. Taken as a whole, these essays give as readable a review of a considerable range of contemporary science as is likely to be met with anywhere. A number of equally important lines of research, of course, get omitted altogether. But what we have here is well worth having.

The thesis of the essays is one which scarcely needs proving to the philosopher. He would admit at once the importance of the study of theory. Perhaps, rather, he would need to remind himself of a certain fortuitousness with which many of our great mechanical applications of science have supervened upon theory. Doubtless there are a hundred persons who can apply a new discovery of scientific principle to one who can make the discovery itself. But for all that, it still remains true that some of our most important inventions are exceedingly simple in themselves and require very little prior theory; the processes of manufacture in economically profitable quantities may require more application of theory than the original invention. It might, however, be even in these cases maintained that the happy accident is more apt to occur to, and bear fruit in, the mind that is well-grounded in scientific theory.

The thesis of this book might well lead us to another line of thought which is well worthy of our attention in these days of discussion about social reconstruction. The economic reward which comes to the pure scientist bears no such ratio to the good done the community as does that of the successful lawyer or business man.

The question is not solved by saying the pursuit of truth is its own reward; the question is not an individual one about the minimum reward the scientist can get along with, but a social one as to what the society can do for society's sake. The social justice here called for is the putting into practise the principle that society ought, for the good of all her members, to make use to the best advantage of the available brain-power of her members; and this result will not be achieved so long as dazzlingly greater rewards are held out before the ablest young men, attracting them to go into professions whose functions are, whatever the chance for originality in detail, in the broad outlines routine and regulative, than are held out before them as incentives to enter upon a career of creation and discovery that may leave its mark on the whole future history of the race. The solution of this problem is far from easy. He who discovers a new scientific law ought to receive a royalty on its applications, but no present patent system could possibly achieve this end; and he who gives us, like Copernicus, what is, as it were, a new heaven and a new earth, deserves a reward far beyond that accruing from any applications of science whatsoever.

The reviewer had another query come to him as he read this book, *Science and the Nation*. Suppose philosophers were asked to write a similar book, *Philosophy and the Nation*, telling what philosophy is doing just now. What could we philosophers say? We could say that though now, more than ever before, the world is crying out and pleading for a new, better, broader, more adequate philosophy, philosophers have had very little to offer; that most of us have been almost as narrow-minded as the common herd of people, and some of us more so, including among the latter some who feel a pride in their own impartiality; that our thoughts have been meager and critical when they needed to be massive and constructive. Like other salaried men who could not threaten to strike for higher wages, philosophy professors have recently come a little nearer the verge of starvation; but unlike other salaried men, they have not been altogether undeserving of their fate.

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JOURNALS AND NEW BOOKS

THE PHILOSOPHICAL REVIEW. September, 1917. *Philosophy in France*, 1916 (pp. 459-476): ANDRÉ LALANDE. - Examines the influence of the war on contemporary morality and its probable influence on the moral life of the future. Analyzes *Le problème de la mort et la conscience universelle* by Le Dantec. Notes the death of Delbos and Ribot. *Purpose as Tendency and Adaptation* (pp.

477-495): RALPH BARTON PERRY.—Examines temporal direction, tendency, and the relation of an external agent to a tendency as criteria of purpose. Proceeds then to examine purpose from the standpoint of adaptation or complementary adjustment. Of this there are three types, compensatory, progressive and preparatory. Each deals with automatism and is not a criterion of purpose. *Introspection and Intuition* (pp. 496-513): JOHN LAIRD.—Expresses the demand for a psychological analysis of Bergson's theory of intuition. Has psychology failed to analyze such a process, or can it be that there is no such process? Concludes that introspection, regarded as an act of direct acquaintance with the mind, is a perfectly possible process. *Two Types of Idealism* (pp. 514-536): J. E. CREIGHTON.—The two types of idealism are mentalism or existential idealism and speculative idealism. The former asserts that everything is mental in character and by its analytical method and its allegiance to the category of existence issues in realism; the latter is characterized by its direct acceptance of things as having value or significance, and by its contention that things form part of a permanent system of relations and values. *Discussion: Progress in Philosophical Inquiry*: ARTHUR O. LOVEJOY.—Replies to critics of the proposed *Summa Metaphysica*. *The Knowledge of Other Minds*: JAMES LINDSAY.—Selves as well as their purposes and intentions may be known. *Reviewers of Books*: W. B. PILLSBURY, *The Fundamentals of Psychology*, GRACE A. DE LAGUNA. George A. Coe, *The Psychology of Religion*, MARY WHITON CALKINS. Frederick J. E. Woodbridge, *The Purpose of History*, GEORGE L. BURR. *Notices of New Books*. *Summaries of Articles*. *Notes*.

Muller, W. Max, and Scott, Sir James George. *The Mythology of All Races: Egyptian and Indo-Chinese*. Vol. XII. Boston: Marshall Jones Company. 1918. Pp. xiv + 450. \$6.00.

Coover, John Edgar. *Experiments in Psychical Research at Leland Stanford Junior University*. Stanford University: Stanford University Press. 1917. Pp. xxiv + 641. \$3.50, \$4.00 or \$5.00.

Guthrie, Kenneth Sylvan. *Numenius of Apamea, the Father of Neo-Platonism: Works, Biography, Message, Sources and Influence*. Grantwood, N. J.: Comparative Literature Press. 1917. Pp. iv + 215. \$1.40.

Bridgman, Olga. *An Experimental Study of Abnormal Children, with Special Reference to the Problems of Dependency and Delinquency*. Berkeley, California: University of California Press. 1918. Pp. 59. \$.65.

Wissler, Clark: Editor. *Societies of the Plains Indians*. Anthropological Papers of the American Museum of Natural History. Vol-

ume XI. Issued in thirteen parts: C. Wissler, R. H. Lowie, P. E. Goddard, A. Skinner, J. R. Murie, contributors. New York. 1916.

Alexander, Hartley Burr. *Liberty and Democracy, and Other Essays in War-Time*. Boston: Marshall Jones Company. 1918. Pp. viii + 228. \$1.75.

NOTES AND NEWS

Mind announces the following series of Joint Meetings of the Mind Association, the Aristotelian Society and the British Psychological Society. They will be held at the Hall of the University of London Club, 21 Gower Street, London, W. C. 1.

Friday, July 5th (at 9 P.M.) "Space-Time," Professor S. Alexander.

Saturday, July 6th (at 10 A.M.) Symposium: "Are Physical, Biological and Psychological Categories Irreducible?" Dr. J. S. Haldane, Professor D'Arcy W. Thompson, Dr. P. Chalmers Mitchell, and Professor L. T. Hobhouse.

Saturday, July 6th (at 2.30 P.M.) Symposium: "Why is the 'Unconscious' unconscious?" Dr. Ernest Jones, Dr. W. H. R. Rivers and Dr. Maurice Nicoll.

Sunday, July 7th (at 2.30 P.M.) Symposium: "Do finite individuals possess a substantitive or an adjectival mode of being?" Dr. Bernard Bosanquet, Professor A. S. Pringle-Pattison, Professor G. F. Stout and Lord Haldane.

Monday, July 8th (at 2.30 P.M.) Short Communications of Special Problems.

MESSRS. R. G. ADAMS & Co., Columbus, Ohio, announce the publication of *The Field of Philosophy* by Professor Joseph Alexander Leighton.

DR. JOHN J. TIGERT, head of the department of psychology at the University of Kentucky, has been granted leave of absence and will go to France at the end of the academic year to enter Y. M. C. A. work.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

SOME DIFFICULTIES IN JAMES'S FORMULATION OF PRAGMATISM¹

WITH the growing importance of pragmatism in the philosophical arena, there arises a corresponding need for a clear understanding of it. One of the most significant attempts at self-definition on the part of the pragmatists is the volume called, suggestively, *Creative Intelligence*. Its title calls attention to the pivotal position of the definition of consciousness in this philosophy, and emphasizes at the same time its functional nature.

There is another, and a very important, approach which may and should be made to pragmatism, and that is an approach through the philosophy of William James. In studying the relationship between James and pragmatism, there is need for careful analysis in order to discover wherein pragmatism has advanced beyond James's formulation of it.²

It is my hope to show this advance in regard to the central problem of consciousness, and for this purpose I shall discuss the suggestiveness of James's use of the *fringe*; his inability, however, to escape entirely from dualism, which asserted itself in the latter essays as well as in the *Principles of Psychology*; the confusion between truth and reality which invalidated his two tests, whereby objects are distinguished from thoughts; and finally his return to sensationalism in the guise of "pure experience." How present-day pragmatism escapes these pitfalls of dualism by the insistence upon consciousness as functional is the opposite side of the picture and the moral of the tale.

As early as 1890 James suggested in his doctrine of the fringe the germinal idea that there is in conscious experience some element

¹ This study was undertaken at the University of Illinois under the direction of Professor B. H. Bode.

² One commonly hears it said that the name pragmatism is outworn and that functionalism, behaviorism, instrumentalism or possibly Deweyism, are more adequate terms. I feel, however, that historically, for in its short existence it has made history, there is much to be said in favor of the word pragmatism.

of indeterminateness, some need for reconstruction of the given data—the very aspect of consciousness which the authors of *Creative Intelligence* find supremely significant.

The pages of the *Psychology* in which James discussed the nature of the fringe are too familiar to call for direct quotation.³ It will be remembered that James spoke of the fringe as “part of the object cognized.” That object might itself be a problem, a gap, and the fringe might be relations of “unarticulated affinities.” The most important characteristic of the fringe is, he repeated, “the mere feeling of harmony or discord, of a right or wrong direction in the thought.”⁴ This conception of harmony as implying growth or progressive development of the object of thought in a certain direction was a revolutionary idea for 1890.⁵ In 1918 it still needs to be explained.

In James’s later thought, the fringe as harmony or discord of direction was translated into the phrase “continuity of experience,” and in this connection reached the highest development James ever gave to it. Nowhere did James state the truly functional nature of relationships so clearly and so unambiguously as in his reply to Mr. Bode’s criticism of his doctrine on the ground that it implied a necessary transcendence of experience.⁶ In reply to his critic, James said that the objective reference contained in such a relationship as *and* does not transcend experience, because we actually find the future within the present experience. James’s own words were: “Radical empiricism alone insists upon understanding forwards also, and refuses to substitute static concepts of the understanding for transitions in our moving life. A logic similar to that which my critic seems to employ here should, it seems to me, forbid him to say that our present is, while present, directed to our future, or that any physical movement can have direction until its goal is actually reached.”⁷

One can understand how James’s reiteration that “we are expectant of a ‘more’ to come, and before the ‘more’ has come, the transition nevertheless is directed towards it,”⁸ may appear to a reader an obvious misuse of objective reference, and so indeed it would be, were it not that James had insisted in this connection that

³ Cf. *Principles of Psychology*, Vol. I., p. 258 *et seq.*

⁴ *Ibid.*, p. 261.

⁵ The fringe, we must not forget, had a static as well as dynamic aspect for James. It was a “halo” as well as a “tendency.”

⁶ Cf. B. H. Bode, *Pure Experience and the External World*, this JOURNAL, Vol. II., p. 128, and James, *Essays in Radical Empiricism*, pp. 234–240.

⁷ *Ibid.*, 238–239.

⁸ *Ibid.*, p. 237.

it is a fact of experience that the future is found within the present. Here James is one with the pragmatists of to-day whose work may be regarded primarily as expository of the fact which James here affirms.

That James did not always explain objective reference thus satisfactorily will be considered in the course of this review. We shall find that he did what he criticized rationalists for doing: he treated experience as chopped into discontinuous static objects, because he dropped the future reference out of the present. The force of his training in dualistic modes of thinking was too strong even for his genius, and he therefore failed to be wholly consistent with his own advanced position.

This brings us to a consideration of the position which James called a "modified dualism." It was for James only another way of describing the object with its fringe of relationships and the important truth which he meant to emphasize by it was not that two realities of different orders of existence face each other in experience, but that reality may function in two ways, now as thought and now as thing. By good right is James high in the esteem of pragmatists, for thus freshly and vigorously envisaging the problem.

This modified dualism, which is the theme of many of the *Essays in Radical Empiricism*, marked a distinct advance beyond the position taken in his *Principles of Psychology* in regard to the "Stream of Thought," for he no longer held that thoughts and things belonged to different orders of existence, but said instead that they are the selfsame piece of experience taken twice over in different contexts, now as thought and now as thing.⁹ In his own words we find: "My thesis is that if we start with the supposition that there is only one primal stuff or material in the world, a stuff of which everything is composed, and if we call that stuff 'pure experience' then knowing can easily be explained as a particular sort of relation into which parts of experience may enter. The relation itself is a part of experience; one of its 'terms' becomes the subject or bearer of the knowledge, the knower, the other becomes the object known." Further quotations will serve to make his meaning clear. He wrote: "The one self-identical thing has so many relations to the rest of experience that you can take it in disparate systems of association,

⁹ *Essays in Radical Empiricism*, p. 4. It is disconcerting to find that James added a footnote at this point to this effect: "In my *Psychology* I have tried to show that we need no knower other than the passing thought." This would seem to indicate that he felt a fundamental agreement between the two views and that the twenty years of doubting the existence of consciousness as an entity, of which he spoke at the beginning of the essay, had not made him wholly dissatisfied with his earlier dualism.

and treat it as belonging with opposite contexts. In one of these contexts it is your field of consciousness; in another it is 'the room in which you sit,' and it enters both contexts in its wholeness, giving no pretexts for being said to attach itself to consciousness by one of its parts or aspects and to outer reality by another. . . . The physical and the mental operations form curiously incompatible groups. As a room, the experience has occupied that spot and had that environment for thirty years. As your field of consciousness it may never have existed until now. . . . In the real world fire will consume it. In your mind, you can let fire play over it without effect. As an outer object you must pay so much a month to inhabit it. As an inner content you occupy it for any length of time rent free. If in short you follow it in the mental direction, taking it along with events of personal biography solely, all sorts of things are true of it which are false, and false of it which are true, if you treat it as a real thing experienced, follow it in the physical direction and relate it to associates in the outer world."¹⁰

Once having said that thoughts and things are not different forms of existence, James was bound to make the further explanation of how, then, they manage to separate sharply into the two contexts, the thought, or personal biography context, and the thing context, formed of purely physical, and non-biographical relations. We do speak of thoughts and we do speak of things, and how do we make the distinction?

We know his answer, namely, that the distinction between a thought and a thing is a dualism based upon function. Unfortunately the precise nature of this functionalism escaped him, and the consequences of this failure were momentous.

James offered two apparently unrelated explanations of the method by which we distinguish between thoughts and things. The first and simplest test rests upon the relative stability of relationships and might suffer translation into the phraseology of the *Psychology* as harmony or lack of harmony of the fringe. Thus according to the test of stability we are able to distinguish between a real room and a thought of a room, because the real room has stable relationships, whereas the idea of the room has not. The second functional test, upon which James placed much emphasis, is that the idea leads us toward reality: the idea of the room, for instance, enables us to reach the room. Here we see the feeling of direction, so characteristic of the fringe, now fully developed into actual guidance, as expressed in terms of behavior. Let us examine each of these tests in turn.

¹⁰ *Ibid.*, pp. 12-15.

When we examine the first we find much plausibility in it. Every one will admit that real knives will cut real sticks, and will admit no less readily that a little boy's most vivid thought of a knife has never yet cut a willow whistle. In the boy's dreams the knife may or may not fashion the coveted whistle, but in the world of things a certain knife applied in a certain way produces a definitely calculable result. It was this certainty of result which led James to speak of "the stubborn, cohesive, and permanent relationships"¹¹ which constitute the context of what we know as things. This stability inevitably comes to be contrasted with the unstable relationships, fleeting as dreams, which constitute the context of what we know as thoughts. Thus James said, once more using the room as an example: "The room thought-of, namely, has many thought-of couplings with many thought-of things. Some of these couplings are inconstant, others are stable. In the reader's personal history the room occupies a single date—he saw it only once perhaps, a year ago. Of the house's history, on the other hand, it forms a permanent ingredient. Some of the couplings have the curious stubbornness, to borrow Royce's term, of fact, others show the fluidity of fancy, we let them come and go as we please. . . . The two collections, first of its cohesive and second of its loose associates, inevitably come to be contrasted. We call the first collection the system of external relations, in the midst of which the room as real exists, the other we call the stream of our internal thinking, in which as a mental image it for a moment floats."¹²

James realized, as others had not, T. H. Green, for example, who considered unalterableness the test of reality,¹³ that to name the relationships of things coherent, stable, or unalterable, in distinction to the relationships of thoughts, was merely to state the problem. The terms unalterableness and stability needed explanation themselves, and as James saw, this explanation could be given only in functional terms. Accordingly he translated stability of relationship into its equivalent in terms of behavior, saying that we sift out the "real" from the "mental" objects because with real objects "*Consequences always accrue.*"¹⁴ As many critics of pragmatism have followed James in believing that this is indeed the real meaning of functionalism, it will be well for us to understand what James meant when he said that when we deal with real objects "consequences always accrue." Taking a pen as an example of the application of the functional criterion, he writes: "To get classed either

¹¹ *Ibid.*, pp. 21, 22 ff.

¹² *Ibid.*, pp. 21–22.

¹³ Cf. T. H. Green, *Prolegomena: The Spiritual Principle in Nature*, p. 24.

¹⁴ *Essays in Radical Empiricism*, p. 33.

as a physical pen or as some one's percept of a pen, it must assume a *function*, and that can only happen in a more complicated world. So far as in that world it is a stable feature, holds ink, marks paper and obeys the guidance of a hand, it is a physical pen. That is what we mean by being physical in a pen. So far as it is instable, on the contrary, coming and going with the movements of my eyes, altering with what I call my fancy, continuous with subsequent experience of its 'having been' (in the past tense), it is the percept of a pen in my mind. These peculiarities are what we mean by being conscious."¹⁵

The example is apparently definite enough and simple enough, yet one soon finds that its meaning is far from clear. One explanation of the example may be that James considered the stable relationships constitutive of reality as existing between objects independent of experience, objects which form the subject-matter of the physical sciences for instance, but which, as soon as brought into relationship with an experiencing organism, become mental existences. If this is a true interpretation, the significance of the functional test is gone and a dualism unmodified and dangerous nullifies James's effort to advance. For if stable relationships can exist only outside of experience, James, no less than the idealist or the realist, should ascribe thinghood in an absolutistic sense to a world independent of experience. Indeed, the logical result of this interpretation of his definition of reality would be to deny that reality ever enters into experience, for it would mean a reinstatement of the belief in the duality of the real and the apparent, in such sense that the real would be an unmeasurable, unapproachable absolute, a belief which was repellent to James.

It may puzzle one to discover that James listed among the stable relationships of a pen, linking it with reality, "obeys the guidance of a hand," which is certainly a relationship to the organism, and listed among the fluctuating relationships which link it with ideas, "coming and going with the movements of my eyes," which is likewise a relationship to the organism. What is the difference between the two relationships, that of the pen guided by the hand and that of the pen seen or not seen by the eyes? Certainly in each case the conditions governing the consequences which accrue may be stated in terms of the physical sciences. The laws of optics are no more subjective than the laws of pressure and resistance.

It is the next item in the list which offers the clue to the criterion toward which James should have worked. He spoke of the pen's altering with one's fancy and said that this is one of the possible

¹⁵ *Ibid.*, pp. 123-124.

relationships of a percept of a pen. It is, indeed, but the reason for this cleavage between the physical and the psychical James apparently failed to grasp fully. He limited himself to judgments in retrospect concerning "the consequences which always accrue," which is indeed one way, but not the most significant way in which we distinguish between thoughts and things. If, in retrospect, we find that the promise of fulfilment made by any object of experience was indeed "made good,"—if the promise of the pen to mark paper, for instance, was carried out, we continue to call our experience an experience of reality, or we may call it true, but if in retrospect we find that the promise of fulfilment was not "made good" we say that we merely thought it was a pen, but that our idea was erroneous. Now the pragmatist insists that this is only a secondary interpretation of stability and that we do not need to wait for a judgment in retrospect to distinguish between thoughts and realities, since that distinction lies at the very heart of every present experience. Just in so far as the object controlling our behavior is in need of further reconstruction, just in so far as it is yet undetermined, in so far as it lacks stability, in the sense of guiding behavior by a clear forecast of the future, and finally just in so far as these inadequacies are in process of purposive reconstruction, just in so far are we conscious of the object; in other words, the experience as indeterminate is a "thought." James was quite right in connecting stability with objectivity, for real objects are experience as determined, as furnishing a basis for further determination, but he missed the full significance of stability by confusing reality with truth.

Thus James misused the functional test of stability, which became in his hands a means for distinguishing truth from error, but not, as he thought, for making the further distinction between idea and object. If I try to warm myself by putting an imaginary log on my dying fire, consequences of a satisfactory nature do not, it is true, follow, although, as freezing mortals have uniformly testified, there is a fatal dependability and stability about the consequences of this act. There was ambiguity in James's statement of his problem, for what he actually meant was not merely a thought of a log as opposed to a real log in such a case, but an absent log-as-promising-the-same-results, as a present log promises. Then in retrospect he should have seen that whereas one promise is uniformly fulfilled, the other is not, and that a true experience is thus separated from one full of error. Being, we must assume, unaware of this ambiguity in the statement of his problem, James used stability as a test of truth, with the confident assurance that he was using it as a test for the distinction between ideas and objects, which, as we have seen, is a further distinction which may arise from an experience of error, but is not to be identified with it.

The second test by which he proposed to distinguish between a thought and a thing, namely the character of experience as leading, brought him no nearer a satisfactory conclusion because it rested on the same fundamental confusion of the knowledge of the reality of an object with the knowledge of the truth of a judgment. Here, again, had James fully realized the significance of his doctrine of the fringe in respect to "the future within the present" his doctrine of leading might easily have been made consistently pragmatic. But this motivation by the future James dropped out with the result that his doctrine of leading became essentially unintelligible. Yet he worked with the idea so long, so brilliantly and so honestly, that it became the very core of his philosophy and the foundation of his doctrine of truth. It is the key to the proper interpretation of his *Essays in Radical Empiricism* to a large part of *The Pluralistic Universe* and to the two closely allied volumes *Pragmatism* and *The Meaning of Truth*. He stated the position in its simplest terms in speaking of the knowing of perceptual experiences. "One experience would be the knower, the other the reality known; and I could perfectly well define without the notion of 'consciousness' what the knowing actually and practically amounts to—leading towards, namely, and terminating in percepts, through a series of transitional experiences which the world supplies."¹⁶

In pursuance of this conception of consciousness he said that the knower and the known are either (1) "the self-same piece of experience taken twice over in different contexts; or they are (2) two pieces of actual experience belonging to the same subject with definite tracts of conjunctive transitional experience between them or (3) the knower is a possible experience of that subject or of another, to which the said conjunctive transitions would lead, if sufficiently prolonged."¹⁷

It was, as we have seen, by the test of stability of relationships that he sought to determine in the first case whether the self-same piece of experience was to be considered as a thing or as a thought. In the second and third types knowing is considered as a transition, actual or possible, from one piece of actual experience to another. As an example James took the cognitional relation existing between his thought of Memorial Hall while sitting in his library at Cambridge, and Memorial Hall. Again, James's explanation missed the significance of cognition and described verification in its stead. He said: "My mind may have before it only the name, or it may have a clear image, or it may have a very dim image of the hall, but such intrinsic differences in the image make no difference in its cognitive

¹⁶ *Ibid.*, p. 25.

¹⁷ *Ibid.*, p. 53.

function. Certain extrinsic phenomena, special experience of cognition, are what impart to the image, be it what it may, its knowing office. For instance, if you ask me what hall I mean by my image and I can tell you nothing; or if I fail to lead you towards the Harvard Delta, or if, being led by you, I am uncertain whether the Hall I see be what I had in mind or not; you would rightly deny that I had 'meant' that particular hall at all, even though my mental image might to some degree have resembled it."¹⁸

It is evident that James was here describing, not as he supposed cognition or forward-looking, but verification or backward-looking. He held that fulfilment of meaning is cognition, and not merely verification as he should have held, and then he doubled the failure by advancing no definition of meaning, except as he called it leading or "mental pointing" which had no cognitional value until identified with truth. He said of an idea that, if fulfilled, then "my soul was prophetic and my idea must be and by common consent would be called cognizant of reality."¹⁹ If this statement could be taken as a description of verification only, as was not intended, it is one with the genuinely pragmatic tenet that effective leading is the test of truth.

But James was careful to establish the fact that he was using leading as the functional test of cognition. He said: "In this continuing and corroborating, taken in no transcendental sense, but denoting definitely felt transitions, *lies all that the knowing of a percept by an idea can possibly contain or signify*. Whenever such transitions are felt, the first experience knows the last one. Whenever certain intermediaries are given, such that, as they develop toward their terminus, there is experience from point to point of one direction followed and finally of one process fulfilled, the result is that *their starting point thereby becomes a knower and their terminus an object meant or known*."²⁰

Evidently, as a description of knowing, this again raised the vexed question of objective reference. James did not hold consistently to the truly pragmatic conception of objective reference made intelligible by the presence of the future as a present quality of objects, which we have seen him expressing in his reply to his critic, but instead he held that an idea, or, as he sometimes said, an experience, is the starting point of knowledge, that there are intermediaries in continuous development from point to point, that there is a definite direction of development, and finally a terminus, which is the object meant or known. Now witness the confusion which was caused by

¹⁸ *Ibid.*, p. 55.

¹⁹ *Ibid.*, p. 56.

²⁰ *Ibid.*, p. 56.

substituting this description of a process of verification or fulfilment of meaning for the description of a process of cognition or expectation of a fulfilment which may or may not come. James said that the transition, the development and the continuing must be taken in no transcendental sense, but simply as denoting definitely felt transitions, relations which "unroll themselves in time." Then, however, he introduced a non-experiential and purely transcendental element by saying that they develop toward a terminus,²¹ a terminus, by definition not yet within experience, yet guiding experience; that the development has a direction—a direction given by the object still outside of experience—and the result is a fulfilment, an end intended from the first but known only when reached. James completed the confusion by saying of the fulfilment, that the starting point *thereby* becomes a knower and the terminus an object meant or known. By completing its promise, a promise, which was not a promise, becomes a promise. And then once more James distinctly said that he was not talking of truth but of cognition for he said that when the object is reached "the percept here not only *verifies* the concept, proves its function of knowing that percept to be true, but the percept's existence as the terminus of the chain of intermediaries *creates* the function. Whatever terminates that chain was, because it now proves itself to be, what the concept 'had in mind.'²²

James was not blind to the dilemma involved in this theory of objective reference and proposed a solution for it which unfortunately takes away the last hope of interpreting the objective reference in truly functional terms. He stated the dilemma thus: "Can the knowledge be there before those elements that constitute its being have come? And if knowledge be not there, how can objective reference occur?"²³ The solution he found in a distinction between knowing as verified and completed and the same knowing in transit. This knowledge in transit, or virtual knowledge, not "completed and nailed down" constitutes, he said, the greater part of our knowing. "*To continue thinking unchallenged is, ninety-nine times out of a hundred, our practical substitute for knowing in the completed sense.* As each experience runs by cognitive transition into the next one, and we nowhere feel a collision with what we elsewhere count as truth or fact, we commit ourselves to the current as if the port were sure."²⁴

The difficulty with the solution for the dilemma is that one cannot discover what James could possibly mean by "virtual knowledge."

²¹ *Ibid.*, p. 57 *et seq.*

²² *Ibid.*, pp. 60–61.

²³ *Ibid.*, p. 67.

²⁴ *Ibid.*, p. 69.

He had insisted that the end known creates the function of knowing. Here he plainly said that ninety-nine times out of a hundred the end does not create the function. However, what does "create the function" in these ninety-nine exceptions to the rule James did not and could not say. At this point, had he been a consistent pragmatist, James would rightly have emphasized the functional nature of the cognitive relation. But he said not a word at this crucial point of this relation of simultaneous stimulus and response between organism and environment, in which the leading is done by the future, which, in the form of a present quality of the environment, shows the consequences of possible action.

This contrast between virtual and completed knowledge played an important part throughout James's system. It is the same idea which appeared in the contrast which he made between conceptual and perceptual knowledge or what he calls more descriptively still, "knowledge about" versus "direct acquaintance." The respective values which James set on these types of knowing is most significant of his failure to be pragmatic. That he could say that "knowledge as direct though 'dumb' acquaintance is superior to knowledge about"²⁵ places him among the dualists who find in sensations a direct revelation, and a miraculous as well, of the independent, external world. He said also: "it is always the speechlessness of sensation, its inability to make any statement, that is held to make the very notion of it meaningless, and to justify the student of knowledge in scouting it out of existence. . . . But in this universal liquidation, this everlasting slip, slip, slip, of direct acquaintance into knowledge about, until at last nothing is left about which the knowledge can be supposed to obtain, does not all significance depart from the situation?"²⁶

Accordingly an interesting difference appears between the attitude which James took toward conceptional and perceptual knowledge and the attitude which the pragmatist takes. Since James had defined knowledge as an affair of leading, the spatial metaphor took its tribute, as metaphors will. Perfect knowledge, accurate and complete, meant closeness of approach to the object, an actual face-to-faceness. This was "direct acquaintance," also perception, also, sometimes, sensation. "Direct knowledge," so described, became static, a mere spectator, and "knowledge about" was no less inherently static, for it meant simply the removal of thought from its object by a series of static mediating acquaintances. This happened because the leading became for James a mechanical conception with no inner spring of purpose. This the pragmatist supplies by in-

²⁵ *The Meaning of Truth*, p. 39.

²⁶ *Ibid.*, pp. 13-14.

terpreting the leading in functional or instrumental terms freed from the spatial metaphor. He says that knowing, whether perceptual or conceptual, means that some part of the organism's environment controls or directs the behavior of the organism in a new way, meaning by new, non-mechanical, since it is a control by the future as an experienced quality of the object.

But leaving aside the pragmatic solution for the time, we find that James's theory of consciousness as leading destroys itself at either of the two possible turnings on its road to reality. James said that "knowledge about" is a stage only on the path to "direct acquaintance" and that the latter corresponds to reality. Correspondence he explained as meaning that "direct knowledge," if valid, will terminate in the reality meant.²⁷ It was a case again of the idea of Memorial Hall leading to Memorial Hall, and again James substituted a test of truth, namely, fulfilment of promise, for a criterion of the presence of knowing, the proper criterion being, as a pragmatist would hold, the future acting in the present. But it was more serious than that, for what becomes of a thought when it reaches reality? Does the thought of Memorial Hall wait outside on the doorstep when it happily "terminates in" Memorial Hall?²⁸ We must reluctantly admit that the "mental pointing" and "effective leading" prove meaningless even for purposes of verification, when stated as James proposed. A thought can not approach a thing; it can not "terminate in" an object. One body can approach another, and a thing, through its meaning, can direct a conscious organism's approach. The church bell summons to prayer, the bugle calls to arms, and a spring day invites to the woods and hills. But James did not so provide for the functioning of the object, and so missed the only possible basis for "the effective relationship" in consciousness.

Some one may well object that it is a misrepresentation of James to ask what becomes of the thought of Memorial Hall when it terminates in the reality, because James had already answered the question in such a way as to avoid representationism. He spoke, as we saw in the beginning, of the point at the intersection of two lines, appearing in one context as a thing and in another as a thought, and by this *identity* of thought and thing, it may be claimed that James had

²⁷ Cf. *ibid.*, p. 17 *et seq.*

²⁸ It is needless to say that for the consistent pragmatist this question does not arise. Insisting as he does that a thought is a certain functioning of the object in relation to the body, he has no superfluous *tertium quid* to dispose of, when a particular function has been performed. He needs to say only, that the object has changed and the body is responding differently. James was trying to establish just such a functional identity of thought and object, but mistook the proper method of proof.

set himself beyond the reach of all criticism to which an unmodified dualism is subject. But this is the point under discussion. James tried in two ways to establish this identity and failed in both. We have seen what became of his test of stability, and we are now in a position to see the dilemma to which his theory of consciousness as ambulatory brought him. For having defined consciousness as a leading toward reality, any stage of the process before the reality was reached might be considered a more or less perfect representation of the object, depending upon proximity, but the absolute termination of the process could bring only unconsciousness, and not consciousness. And so it was that his theory set him, if he had but known, this fruitless choice: direct knowledge was either an unmediated mirroring of reality, and hence representationism and dualism with their attendant enigmas; or else direct knowledge was unconsciousness, for having defined consciousness as leading, what terminated the process would terminate the consciousness and a bystander, the Absolute once more, would be needed to recognize the cognitive quality of this way of knowing.

But James, it must be confessed, would not have welcomed this criticism, for he felt that he had met it and escaped from it once for all by his doctrine of pure experience.²⁹ That this doctrine could not save him from the consequences of dualism, moreover that it further committed him to them, has, I think, become apparent to most students of James, for pure experience is only another name for simple sensations.

To define pure experience he said that "the instant field of the present is always experience in its pure state, plain, unqualified actuality, a simple *that*, as yet undifferentiated into thing and thought and only virtually classifiable as objective fact or as some one's opinion about a fact."³⁰ And then, as we saw, James used the test of stability to break pure experience apart into thoughts and realities. If, however, we try to define pure experience which is not yet thought and not yet objective reality, the sense of bewilderment grows upon us. James called it also the perceptual order and the "immediate flux of life,"³¹ but he elsewhere tells us that it is the

²⁹ For a discussion of this concept cf. Wendell T. Bush, *The Empiricism of James*, this JOURNAL, Vol. X., pp. 534-35, 537.

³⁰ *Ibid.*, p. 74.

³¹ Cf. *ibid.*, p. 93. Here in speaking of pure experience as a feeling of a *that* which is not yet a *what*, and as being therefore the sort of experience which only new born babies or men in semi-coma may have in its purity, we return to the point of view of the *Principles of Psychology* in regard to sensation and are forced to recall the typical experience of the "child new-born in Boston" and the italicized statement that "*Pure sensation can only be realized in the earliest days of life*" (Vol. II., p. 7). In other words James had not progressed as far from his earlier views as he himself thought.

essence of the perceptual order to stand face-to-face with a reality in which it terminates. Therefore pure experience can not be the same as the perceptual order, and it is a confusion to say so, because it contains within itself in undifferentiated state the thought and the reality thought-of, whereas James had made it the essence of the perceptual order to oppose these two.

Moreover pure experience with all its self-sufficiency is in flattest contradiction to the conception of the fringe, wherein the struggle to fill the "aching gap" is all important, for James felt that the stream of pure experience yields content rather than problems and he warned us in regard to our thoughts that: "Only in so far as they lead us, successfully or unsuccessfully, back into sensible experience again, are our abstracts and universals true or false at all."³²

Thus, at this final point, we are forced to conclude that once again James failed to see the proper functional nature of a suggestive conception. Had he been able to identify pure experience with the dynamic conception of the fringe as a *that* which is indeterminate; is in need of reconstruction; is concrete in the sense that it is a concrete problem; and is indeed "the immediate flux of life," out of which of a truth come distinctions between ideas and objects; then James might have escaped dualism.

Regretfully, however, we are forced to admit that James failed to reinterpret dualism as a satisfactory philosophical creed, primarily because he slipped over the real problem of knowing altogether, and dealt with the problem of verification, which he mistook for it. Consequently the pragmatism which he defined is not an adequate explanation for the problem of knowledge, but is, at best, as he himself called it, a new name for traditional ways of thinking. Moreover his failure came because he did not hold closely enough to his own statement that "our present is, while present, directed toward our future."

Yet, notwithstanding this, we must not lose sight of his immeasurable service to philosophy. James's suggestions, with all the brilliancy and charm of their execution, did much to foster the "curious unrest" which he himself noticed in the philosophical atmosphere of the time;³³ to loosen old landmarks, and above all, to stimulate the many students of philosophy who recognized him as a leader to renewed efforts in their "unusually obstinate attempts to think clearly."

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³² *Ibid.*, p. 100.

³³ *Ibid.*, p. 39.

“THE MOST DESIRABLE MACARIA”

THERE are many names which flit like pale ghosts without substance through the corridors of the past, seen now and then in a brief glimpse at some propitious moment, and then once more dislimning when the hour is gone. Poor flies in amber, they are preserved for us by the casual mention of some greater man with whom long since they used to hold converse on affairs of state. Such a name is that of Samuel Hartlib, whom few know in these days except as the person to whom Milton addressed his tractate *Of Education*, that wonderful idealistic plan

too bright and good
For human nature's daily food,

in which he legislated, it has been said, for a college of Miltons.

“A person sent hither,” the Latin secretary calls him, “by some good providence from a far country, to be the occasion and incitement of great good to this island.” If *Lycidas* has forever enshrined the tenuous and uninteresting Mr. King, has rescued him from the waves of the Irish Sea and made him what Shelley calls a “nursling of immortality,” this sentence, one would think, might ensure Hartlib a proportionate measure of commemoration, even to-day. Rathe primrose and pansy freaked with jet for the hapless divinity student; but one little sprig of rosemary for remembrance to “honest and learned Mr. Hartlib,” as Evelyn calls him, “a public-spirited and ingenious person.”

Born probably in Poland, he seems to have come from Prussia into England in 1628; and from then until his death in 1662, in spite of depressing poverty and illness that grew more and more torturing in his last years, he labored night and day for the promotion of learning. He was in constant correspondence with the most distinguished scholars of the day—a day of most laudable zeal for the increase of knowledge. He was fertile in projects for the spread of scholarship and the useful arts, from husbandry to music. He was ever ready to furnish a commendatory preface to any publication directed to these ends, or to rack his brains to find means to pay the printer of some learned work which could not anticipate a large sale. He is constantly mentioned with respect by Cambridge Platonists and men of science; and though, for all his “pansophical knowledge,” he was no experimentalist, the inspiration he afforded may have had not a little to do with the gradual growth of what was to be the Royal Society, amidst the disorders of the Commonwealth time.

Usually, indeed, these placid scholars contrived to enwrap themselves in a philosophic calm while the clash of arms and the breaking

up of laws went on all about them. Hartlib writes from London before the sound of the jubilant trumpets proclaiming the Restoration has died away, and only mentions incidentally that the King is reported to be "a Teutonicus and lover of chymistry," as well as "an extraordinary lover of musick"; and Worthington goes up from Cambridge, apparently without emotion, in company with other heads of houses and doctors, to present a loyal address to the sovereign whose return was to mean his own removal from his mastership two months later.

Yet, as Diogenes was troubled by the shadow of Alexander, there were times when the noise and turmoil were too much for their peace, and they felt the need of shelter in which no alterations of polity should force them to lay aside their folios. Through their sober correspondence runs a thread of hope that their castle in Spain may become "a habitable mansion on a gravel soil"—though Stevenson's modern phrase is too prosaic for their imaginings, which are usually tinted with the stately colors of Solomon's House as described by Bacon. The loss of the manuscript of "my Lord Verulam's de Arthritide, a most elaborate tract," which Hartlib deplures, made little difference to any but gouty old gentlemen; but had the *New Atlantis* sunk beneath the waves, more than one seventeenth-century scholar would have been at a loss for a model to his projected abode of learning.

One of the most finished and fascinating of these designs is that drawn up by John Evelyn in 1659, and sent by him to Boyle as something not too elaborate and Utopian to be realized "in this sad Catalysis and *inter hos armorum strepitus*." Six founders are all that he postulates for his society, and the total cost is to be within £1,600. The details are so charming that it is difficult to keep quotation within bounds. He proposes "the purchasing of 30 or 40 acres of land, in some healthy place, not above 25 miles from London, of which a good part should be tall wood, and the rest upland pastures, or down, sweetly irrigated." Should they find no adequate house, he has his plans all ready for building, with behind the house "a plot walled in of a competent square for the common seraglio, disposed into a garden; or it might be only carpet, kept curiously, and to serve for bowls, walking, or other recreations." The rule of life is drawn out with the same loving care, from "at six in the summer prayers in the chapel" through a calm and studious day to bed at nine. Distractions, if allowed, are not of the fiercer kind—"all play interdicted, *sans* bowls, chess, *etc.*"; and there is a prescription which anticipates the memorable conclusion of *Candide*, "every one to cultivate his own garden." The plan exposed in detail, Evelyn

addresses Boyle in a strain of enthusiasm in its commendation. "And, sir, is not this the same that many noble personages did at the confusion of the empire by the barbarous Goths, when St. Hierome, Eustochium, and others retired from the impertinencies of the world to the sweet recess of such societies in the east, till it came to be burthened with the vows of superstition, which can give no scandal to our design, that provides against all such snares."

But the excellent Evelyn, as I have said, was by no means singular in his desire to escape the confusion of the times. In a *Proposition for the Advancement of Experimental Philosophy*, published in 1661, Abraham Cowley, whose death—three weeks after *Paradise Lost* was published—was recorded as that of the greatest poet in England, sets forth a scheme even more elaborate. His foundation is a little more costly than Evelyn's; £4,000 a year is the revenue that it is presumed to need. But on this sum are to be supported fifty-six persons, from "twenty philosophers or professors" at the head, and sixteen young scholars under their direction, down to "four old women, to tend the chambers, keep the house clean and such-like services." The details are worked out much more practically than you would expect from a poet, and make delightful reading; but I have not space to expatiate upon them; the curious may read them in his *Works*.¹

And, apart from these plans for giving pansophical learning a local habitation, throughout the whole of Hartlib's correspondence runs the wistful aspiration towards some corporate support in his projects for the spread of knowledge and the amelioration of the race. As early as 1641 he had sent forth, though without his name, a pamphlet embodying his ideal: "A description of the famous kingdom of Macaria, shewing its excellent government, wherein the inhabitants live in great prosperity, health, and happiness." And until almost the very end of his laborious and painful life, his eyes brighten as he speaks of some encouragement to his hopes. In his intimate letters the name Macaria stands for a society which was to unite men of power and wealth with the professed philosophers of the day and render possible many an undertaking which must else have languished. More than once he speaks of learned treatises which can look for no promotion, "except from the most desirable Macaria." In 1660, under the influence of fair promises from certain great men, he is convinced that the day is about to dawn. The learned labors of Petit upon Josephus should be published: "If Macaria were but once extant or acting, I am still of my former opinion, that they have enough for the purchasing of such things, and

¹ Ed. Hurd, I., 219.

for the accomplishing of harder matters. The last secret information tells me they are agreed. I believe they will now within a few days publickly appear."

Gradually, however, the rainbow colors faded. This was in June; and by the middle of October he was writing to Worthington: "We were wont to call the desirable society by the name of Antilia, and sometimes by the name of Macaria: but name and thing is as good as vanished." The name Antilia, he says in a later letter, was taken from "a former society that was really begun almost to the same purpose a little before the Bohemian wars; I never desired the interpretation of it." Apparently the omniscient Crossley did not think it worth while to be more curious when he edited these letters; but I am tempted to go further and offer the conjecture that the title may have looked forward to the position reached by Hartlib in 1661, when he bravely writes: "Of the Antilian Society the smoke is over, but the fire is not altogether extinct. It may be it will flame in due time, though not in Europe." For when his hope vanishes in England, he says significantly to Worthington, "Gentlemen of your acquaintance are much in love with the country of Bermuda, as the fittest receptacle for the gallantest spirits to make up a real Macaria." It seems possible that even before the Bohemian wars some eyes may have turned longingly to the Fortunate Isles where, as in this very generation Waller sang,

huge lemons grow
And orange-trees which golden fruit do bear,
Th' Hesperian garden boasts of none so fair;
Where shining pearl, coral, and many a pound
On the rich shore of ambergris is found.

Well, why not?

America has many things of which to be legitimately proud: is there any sufficient reason why it should not also have the credit, wherever learning is loved, of accomplishing by a joint effort some of the big tasks in the field of scholarship for whose completion the world is waiting?

Our kinsfolk who speak our language have other work just now. Oxford and Cambridge are but thinly tenanted by a few grave elders: England must build the temple of learning, if at all, as in the days of Nehemiah—the sword in one hand, the trowel in the other. And while they are fighting to keep undiminished for us the freedom of the civilization which we love, shall we do nothing but grow rich? They and we, it is true, have vied in offering hospitality to the exiles of Louvain; but we may, if we choose, do more. We may set ourselves to the doing of more than one great piece of scholarly work, too great for the single scholar of slender means.

How?

Let me suggest an answer to the question. Our millionaires have been generous enough in bestowing rich endowments on technical, chemical, medical research; and that is well. But there are branches of learning which neither add to the commercial wealth of our country nor promote the bodily health of our people; and for them no millions are offered. Scholars talk quietly of these together, and wish that they might live to see this or that great work done; and they separate with but little hope that their wishes will be realized.

But are millions needed? I think not. I am wishful to propose a plan which I think perfectly feasible, for the making of first one and then another substantive advance.

The initial step would be the formation of a body of say twenty scholars of national reputation whose names would be a guarantee alike of the seriousness of the undertaking and of the worthiness of the aims pursued by those who would work under their direction. It is not necessary in this initial discussion to mention names; the requisite score will probably suggest themselves without difficulty to most of those who read these pages.

On the publication of the list and with the sanction of these honored names, an appeal is made for annual subscriptions of \$100 to the working fund—not an endowment, but an assurance that the governing body shall be able to spend so many thousands a year on whatever undertaking it decides shall be the first. Is it credible that one man in every million of our population can not be found to give \$100 a year to such a cause? Yet even that means an income of \$10,000, with which a good deal could be done. Twice or three times the number might well be discovered; and then, with such a nucleus, a multitude of smaller subscriptions would soon flow in from those who could not give much besides their hearty sympathy.

The next step would be to select as many men as the funds would permit, of approved scholarship, preferably men not long out of college and with the zeal of youth still upon them—and set them to work. There are many such men who would be only too glad to give two, three, five years to such work if they could be assured of a livelihood. I know them; we all know them. As it is, they must earn their bread by the exacting labor of the class-room, and give but the occasional hours of their vacations to dreams of “great things undone.” Very probably projects would be preferred which would permit of cooperation, of the cumulative work of a number of men over a period of years which could be shortened as the funds increased; and the material thus gathered would in many cases be put

in permanent form by a man possessed of the rarer synthetic gift. Publishing would again be a matter of funds; a printing plant is an obvious development when the time comes for it.

I hesitate to specify particular undertakings, lest, by failing to include the particular interests of one reader or another, I should leave any cold; but it is too vague to say simply that they would range over at least literature, classical scholarship, and history. I shall, therefore, name a few things which happen to come to mind—of course such a governing body as I propose could be trusted to make a wise choice among all the tempting alternatives.

1. An adequate history of the Renaissance, making use for the first time of the incredibly large amount of material now accessible. The Italian government is encouraging the publication of the old chronicles, of a new Muratori, of the epistolaries of famous men, of the archives of the great baronial families, such as the Colonna—sumptuous volumes, every page of which is a challenge to the scholar. Whole periods of history await a rewriting. An exhaustive dictionary and bibliography of the Italian humanists alone is a mighty task; and though a single overworked individual has already set his hand to it, it is evidently one for cooperative effort.

2. Organized work for America similar to that performed by the Early English Text Society; to assemble, edit, and publish (from rare early editions and from the great mass of manuscripts in the possession of our various state historical societies) colonial journals, relations, letters, and other documents of economic, historical, or humanistic interest.

3. A supplement to DuCange's inestimable *Glossary*, working over the large number of medieval texts which have become accessible since the last edition was published some thirty years ago.

4. In the field of dramatic literature, a complete list of English plays, with a critical survey of editions (much work on single authors and plays has been done in recent years, but no reliable general list exists); or an English dramatic history, based perhaps on Genest, that should give whatever is known of stage history. This latter would include a complete critical bibliography, even of diaries, memoirs, proclamations, contracts, that throw light on the subject. Information on English dramatic history is now hopelessly scattered; the results of much important research have been published in inaccessible periodicals, and much remains to be done, especially in eighteenth-century drama.

5. A history of the Jesuits, on such a scale as Lord Acton might have planned. Whatever view, admiring or hostile, one takes of this stirring society, it is incontestable that they have touched the his-

tory of the last four hundred years at innumerable points; and, excellent work as has been lately done on special parts, there is in English no respectable history of their operations as a whole. Yet the facilities for such a work are now far greater than they have ever been before.

6. A series of summaries of monographs in various languages, arranged by subjects; a series of intelligent indices to certain large and frequently used works now without them; and other such tools for the hand of the next generation of scholars.

7. A beginning to be made at an enormous but invaluable piece of work—the sort of encyclopædia which, as my friend, Professor Alexander, of Nebraska, has suggested,² is the only sort that is worth while beginning for the future on a large scale: a rivulet of text meandering through a meadow of bibliography; a bibliography not made, as they have too often been, in the manner of a hasty after-thought, consisting of titles carelessly swept together from other reference works, but slowly and thoughtfully constructed by men who have read the books they recommend and can say which are worth while and why; in a word, “the slow assembling and refining of that ever-increasing expression of fact and fancy which we call the course of civilization.”

For myself, I should like to see at least a man or two kept constantly busy with careful copying and intelligent editing for publication of the vast mass of historical manuscripts which are useless now to those who can not afford to spend months in London and Paris, Vienna and Rome. But if I were to name all the fascinating things I should like to see accomplished, I should never have done. The point is that not a few of them could be done, if some such plan as I have here briefly outlined were put into operation; and many a scholar would have cause to bless “the most desirable Macaria.”

Surely in this age, in this country of unbounded resources, one need not end as Cowley did in 1661: “All things considered, I will suppose this proposition shall encounter with no enemies: the only question is, whether it will find friends enough to carry it on from discourse and design to reality and effect; the necessary expenses of the beginning (for it will maintain itself afterwards) being so great (though I have set them as low as is possible in order to so vast work), that it may seem hopeless to raise such a sum out of those few dead relics of human charity and public generosity which are yet remaining in the world.”

I think better of America than that. A. I. DU P. COLEMAN.

COLLEGE OF THE CITY OF NEW YORK.

² *New Republic*, August 12, 1916.

IDEALISM ON AN AZALEA BUSH: OR PRACTISE AND THE EGOCENTRIC PREDICAMENT

SOME one told me that I should enjoy reading Berkeley, but I don't. Fairy stories are all right when they are labeled as such, but even a moderate interest in the history of the development of philosophy can not make me patient with this fanciful attempt to bolster up the good bishop's theological views. Since two people encountering an object have different ideas of it, since not merely the so-called secondary qualities of Locke, as color, smell, *etc.*, but even the primary qualities, the very body and motion of the thing, differ according to the differing minds considering the object, we are brought to the conclusion that the objects themselves exist merely in the consciousness of people. Yet this is not quite satisfactory, since human experience is limited. Nothing not known, we are told, exists. But since God exists and knows all things, all things exist. "God's in his heaven, all's *there* in the world."

Mr. Perry makes clear the predicament into which this centering of things around man's mind brings us. We can never get at the thing apart from the Ego and the cognitive relation between it and the thing. We can never consider an object at all without getting into some kind of thought connection with it. Are we, then, to be forced into Berkeley's position? Can we have no assurance that the world of things as we see it, hear it, feel it, is real? As a matter of fact the egocentric predicament, as Mr. Bush shows, is no proof either for idealism or for realism; it is merely a proof that that particular example can't be worked that way.

Can it be worked in any way? Maybe not, maybe the whole problem is more or less artificial. I can't imagine a really busy person spending much time pondering whether the chair he sits on is really there or not. It holds him up, and that is all he cares about. If in a moment of abstraction he should sit down on what he supposed was a chair and should find it was an azalea plant, the matter might be brought somewhat strikingly to his attention. And to my philosophically rather uneducated mind the answer to our problem seems to be implied in the unfortunate man's mishap. It was an egocentric predicament. People absorbed in the thought aspect of reality should not expect their material aspects or bodies to act in harmony with other material aspects. The man had an impression that a chair was there, but he had no knowledge of the fact. He acted as if he had and was laughed at as a consequence.

The trouble all begins with Locke's "new way of ideas." Both

Berkeley's idealism and Hume's skepticism grow out of that doctrine and a theory of knowledge based on that shifty foundation. We know not things, but ideas, faint copies of what might appear if we could ever get at them. These simple ideas are combined, their relationships studied, the whole fabric of knowledge is built up. And who can be sure his knowledge is true? If we accept the psychology that Locke and Hume and Berkeley believed in, we must answer, "No one." But we assume to-day that the mind is not a *tabula rasa* but an active, choosing thing. Spinoza's distinction between adequate and inadequate ideas gives us some help here. Our friend's idea of the chair he thought was there was inadequate, it was on the periphery of his attention, it was a sense-impression merely. If some one had jolted him from his brown study and he had looked attentively, he would have seen the azalea bush. He might not have had a wholly adequate idea of it in all its complications and implications, but at least his idea would have been adequate enough to control his actions. What men really seek is knowledge enough to make them act successfully. Possibly our ideas of an object do not absolutely correspond with its scientific constitution. If they are near enough the facts not to bring us to disaster they are true enough for everyday use. We have to take the sensations that the world thrusts upon us and transmute them somehow into thought before they can form the stuff of which knowledge is made. Not all sensations become ideas, not all ideas become clear and distinct. Life is not all sensation nor all thought. We are not merely minds nor merely bodies. We have to take our place in the world of matter as bodies, just as our minds have their being in the world of thought. We have no right to test the existence of things by *our* knowledge of them, nor by the shoving of the burden of proof on to God. Berkeleyan idealism tends to make its advocate narrow-minded and provincial. His world is a small world; he sits at its center and smiles serenely around, letting God take care of everything outside. How do we know things are? How do we know they aren't? The egocentric method of conducting one's life would land one not necessarily in an azalea bush, but probably on a less flowery bed of discomfort.

ANNA T. KITCHEL.

MADISON, WISCONSIN.

REVIEWS AND ABSTRACTS OF LITERATURE

Mental Adjustments. FREDERICK LYMAN WELLS. New York: D. Appleton and Company. 1917. Pp. xiii + 331.

This book is one of the "Conduct of Mind Series." The intro-

duction by Dr. Joseph Jastrow is an excellent statement of its contents, and is of especial value in orienting the reader.

The concept of mental adaptation is launched in the first chapter and is more fully rounded out and given concrete expression in the final chapter. "Life depends upon adapted behavior." Then follow numerous examples of adaptations in the animal world. Modern behavioristic tendencies are recognized by Wells, but a rigorous behaviorism is rejected as being inadequate to tell the whole story of adjustment.

Sexual adaptations are the most important factors involved in human happiness. While the sexual instinct can not be blocked, *i. e.*, can attach itself to almost any object, as in fetichism, yet the proper course of this instinct is difficult to secure. A healthy type of sex consciousness is imperative and can be developed only through healthy activities when shared in mixed company—especially dancing. Repression of the sex instinct leads to a blocking of the sexual trend and builds up internal resistances that may later lead to a poor adaptation in marriage.

The thesis, briefly stated, is that the fundamental trends—the desire for food (economic trend), the preservation of the individual (cared for by the social trend), and the continuance of the species (sexual trend)—must have normal expression. Otherwise compensations must be sought in balancing factors—factors which use up the vital energy provided for these trends. Religion is thus a balancing factor in the lives of many unhappily married people. Wells elaborates in detail the many types of failure to find a happy adjustment to life.

In the chapter on "Use and Waste in Thought and Conduct" the concept of trend is defined more precisely. Because man has a greater variety of trends than any other animal, he has more difficulty in arriving at a perfect adaptation of life. Trends oppose each other and give rise to mental conflicts—these are faulty adjustments to life, such as dreams, magic, and "false," phantastic, or autistic thinking. These shade over from the normal thinking of the savage and the child into the delusions of the insane. Autistic thinking does have a utility in thought, however, in the fields of music, painting, poetry, fantasy, wit, and religion. Realistic or true thinking makes it possible for man to exist in a practical world—while autistic thinking (provided it is not used in making practical adjustments) makes life worth living.

Symbolic association is next discussed. The evolution and function of language is traced in order to interpret symbolism in dreams.

In the continuity of emotion Wells finds an explanation for the "loading" of ordinary experiences with an unusual degree of affect.

The term affect is used to designate processes of pleasantness and unpleasantness. Affective transference, a loading or a siphoning, is a sort of conditioned reflex, although there are important differences. "The affects siphon from one mental process to another, from one pursuit to another—thus there is a 'continuity of emotion.' " Wells rejects the James-Lange theory and looks upon emotion as a central process (cerebral). It is in a consideration of affective transference that psycho-analysis has greatest play.

Dissociation is discussed as showing forms and types of maladjustment. A discussion of the mechanism in dissociated ideas follows and the rôle of dissociation in the formation of delusions is elaborated.

The modern experimental methods of analyzing the intellectual, emotional, and instinctive factors in personality are next presented. Among the tests and scales for the measurement of intelligence Wells emphasizes the importance of performance tests and mentions Pintner's valuable contribution in standardizing Knox's Cube Test as the type of work necessary for the further development of performance tests. Illustrations are given of the method of relative position in measuring the normality of one's "beliefs" and of one's "moral judgments." A discussion of the "association" experiments follows and the author's system for recording data on the personality is presented.

In the concluding chapter Wells gives concrete expression to his thesis that the end of adaptation is happiness. Men seek happiness in egoistic or in altruistic ways and these two tendencies are traced in a description of the function and operation of the sexual, economic, and social trends. Altruistic living out of the fundamental trends is the right solution. The chapter closes with a consideration of what educational policies are most consistent with the purpose of adaptation. Education must fit the individual for the duties of life. Thus learning to master one's love-life and economic existence is fundamental. Measured by this criterion, Wells finds formal education sadly lacking and minimizes the value of classical and cultural education. He argues for the recreational and vocational features of education. To learn to do by doing is the ideal method.

Dr. Wells brings together the most important contributions of anthropology, sociology, psychiatry, and psychology to the problem of right living. Of necessity the material is a bit disconnected, and one doubts whether the popular reader would be able to assimilate readily the contents of the book as a systematic whole. The style is lucid and forceful and the unhesitating use of analogy is at times most helpful.

DONALD G. PATERSON.

JOURNALS AND NEW BOOKS

THE AMERICAN JOURNAL OF PSYCHOLOGY. October, 1917. *A Chart of the Psychometric Function* (pp. 465-470): EDWIN G. BORING. *An Improved Method of Using the Telegraphic Reaction Key* (pp. 471-475): HAROLD A. RICHMOND. - The key should be suspended and held by the opposition of the thumb and finger, and released by the opening movement of the thumb and finger. *Some Striking Illusions of Movement of a Single Light on Mountains* (pp. 476-485): JOSEPH PETERSON. - The observation of a distant mountain light on a dark night gave rise to an illusion of movement of the light. The eye-movement, eye-strain theory is favored as an explanation of this autokinetic illusion. *The Biological Significance of the Eye Appendages of Organisms* (pp. 486-496): P. F. SWINDLE. - Eye appendages and their substitutes enable organisms to retain objects in the field of vision when they have been fixated. Slight intrusions in the field of vision improve the visibility of small and distant objects in continued fixations. *Preliminary Note: The Influence of Changes of Illumination upon After-images* (pp. 497-503): L. P. TROLAND. - Both positive and negative changes were employed. The results seem to call for a revision and extension of the Hering theory. *Value vs. Truth as the Criterion in the Teaching of College Philosophy* (pp. 504-507): W. R. WELLS. - Philosophy holds an important place in the education of the college student. The teaching should be expository rather than critical. *The Term Reaction Time Redefined* (pp. 508-518): P. F. SWINDLE. - With the results obtained from a trained cockatoo and our knowledge of a series of color sensations and their reactions the author redefines reaction time as a unitary group of movements. *An Analytic Study of Visual Perceptions* (pp. 519-577): ANNA SOPHIE ROGERS. - Visual perceptions result as a (1) direct response to stimuli; (2) response to kinesthetic and organic sensation, (3) result of imaginal material. There is a progressive change with a growing increase of the latter factors and a decrease of the former. Meaning is loosely correlated with the clearness of the peripheral and central accessories of perception. *Ecstatic Intoxication in Religion* (pp. 578-584): JAMES H. LEUBA. - Drug, rhythmical and psychical intoxications have always played an important part in religious ceremonies. These intoxications are popular not only for the visions they bring, but also for their delightful sensuous quality. *Minor Studies from the Psychological Laboratory of Cornell University. The Weber-Fechner Law and Sanford's Weight Experiment* (pp. 585-588): MYRL COWDRICK. - The study of a large number of results shows that they approach the formula of Fullerton and Cattell; after practise they more nearly approach the

Weber-Fechner Law. *An Example of the Fractionation of Data from the Method of Constant Stimuli for the Two-Point Limen* (pp. 588-596): L. B. HOISINGTON. *The Effect of Absolute Brightness upon Color Contrast* (pp. 597-607): RUTH L. CRANE. — Light colors induce contrast colors of greater color valence. *Book Review* (p. 608): R. M. Wenley, *The Life and Work of George Sylvester Morris*. *Book Notes* (pp. 609-612): Osias L. Schwartz, *General Types of Superior Men*. Casey Albert Wood, *The Fundus Oculi of Birds, especially as Viewed by the Ophthalmoscope. A Study in Comparative Anatomy and Physiology*. Masaharu Anesaki, *Nichiren, the Buddhist Prophet. Science and Learning in France; with a Survey of Opportunities for American Students in French Universities*. An appreciation by American scholars. Albert H. Buck, *The Growth of Medicine from the Earliest Times to about 1800*. Sanger Brown, II., *The Sex Worship and Symbolism of Primitive Races*. Clement C. J. Webb, *Group Theories of Religion and the Individual*. Louis Henry Jordan, *Comparative Religion; its Adjuncts and Allies*. Clara Endicott Sears, *Gleanings from old Shaker Journals*. W. Tudor Jones, *The Spiritual Ascent of Man*. Stanton Coit, *Is Civilization a Disease?* Hutton Webster, *Rest Days a Study in Early Life and Morality*. T. Harrison Myres, *Bells and Bell Lore; Church Bells of Amounderness and the Archdeaconry of Lancaster*. H. G. F. Spurrell, *Modern Man and his Forerunners; a Short Study of the Human Species Living and Extinct. The Way to Nirvana; six lectures on ancient Buddhism as a disciple of Salvation*. H. F. Stewart, *The Holiness of Pascal*. *Index*.

Adler, Felix. *An Ethical Philosophy of Life, Presented in Its Main Outlines*. New York and London: D. Appleton & Company. 1918. Pp. viii + 380. \$3.00.

Pintner, Rudolf. *The Mental Survey*. New York and London: D. Appleton & Company. 1918. Pp. vi + 116. \$2.00.

NOTES AND NEWS

THE Carnegie Institute of Technology announces the following changes for next year:

Dr. Guy M. Whipple, formerly of the University of Illinois, has been appointed Professor of Applied Psychology and Director of Educational Research. During the past year Dr. Whipple has spent part of his time in Pittsburgh as Acting Director of the Bureau of Salesmanship Research in the absence of Dr. Walter Dill Scott, who has been in Washington since last July as Director of the Committee on Classification of Personnel in the Army. Dr. Whipple will not

enter immediately upon his new work, but will continue with the Bureau of Salesmanship Research as long as Dr. Scott is engaged in war work. When Dr. Scott returns, Dr. Whipple will take up his duties as Director of Educational Research and will carry forward scientific studies in engineering and technical education as they arise in the administration of instruction at the Institute.

Dr. James Burt Miner, the acting head of the Division of Applied Psychology during the absence of Dr. W. V. Bingham, has been promoted to the rank of Associate Professor.

Dr. L. L. Thurstone has been advanced to the rank of Assistant Professor, and has been granted half-time leave for work with the Trade Test Standardization Division of the Committee on Classification of Personnel in the Army.

Dr. A. J. Beatty, Assistant to the Director of the Carnegie Bureau of Salesmanship Research, resigned on June first to become Director of Education in the American Rolling Mills Company, at Marietta, Ohio.

Dr. Kate Gordon has been granted leave of absence for the fall quarter to enable her to carry out for the California State Board of Control a psychological investigation of children who are wards of the state.

Dr. Beardsley Ruml has been given leave of absence to devote his full time to the direction of the work of the Trade Test Standardization Division of the Committee on Classification of Personnel in the Army. The purpose of these standardized Trade Tests is not to discover which trade or occupation a soldier should be trained to follow. It is rather to measure the degree of trade skill which his industrial experience has already given him. The question is not one of "guidance" but of assignment of men to those duties of a technical sort which their civilian occupations have equipped them to follow to advantage in the Army. Oral and performance tests of carpenters, pattern makers, vulcanizers, automobile engine repairmen, truck drivers, electricians, *etc.*, have been developed, standardized and introduced into Army procedure. Tests for skill in more than a hundred other trades of importance in a modern army remain to be developed and standardized. About twenty mechanical engineers, civil-service experts, employment managers and psychologists are engaged in the preparation and standardization of these Trade Tests, working under the immediate supervision of Dr. Ruml at Newark, New Jersey, and under the more general direction of Dr. Bingham who is Executive Secretary of the Committee on Classification of Personnel in the Army, with headquarters in the office of the Adjutant General at Washington.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

SOME ASPECTS OF PRAGMATISM AND HEGEL

PHILOSOPHY is still chiefly concerned with its heritage from Kant. He bequeathed it the problem of epistemology, How is knowledge possible? And like so many bequests it has proven to be a white elephant. Philosophy can not get rid of it. But if it keeps it, it is helpless before a cumbersome menace.

The bequest is really made this cumbersome menace just by the conditions of the will. The problem of epistemology is insoluble just because of the form in which Kant has stated it. It amounts to this. Starting with the world on one side and the mind to know it on the other, how can you ever bring the two together? And of course, just because you started with them apart, you can not bring them together.

Pragmatism has gone into court to contest the will and free it from its conditions. It has attempted to make the problem of epistemology capable of solution by denying the impossible formulation. It is not, says pragmatism, a question of a world on one side and a mind on the other. You are asking about the possibility of knowledge, so you must begin with knowledge. That means beginning, not with mind and its object out of relation, but with them in relation.

That is to say, if you are to analyze knowledge you must begin with a situation in which a mind and an object or objects are in a certain sort of relation. And your problem is to say, What is this relation? The logic of pragmatism, then, is an analysis of the part played by the two major terms of knowing in a logical whole in which they are but parts.

But before pragmatism can carry out its programme it has to clear the field of those prior claimants who have tried to deal with the problem under Kant's conditions. Its first business is to contest—contest, strangely enough, against those whom it would benefit, those others who are struggling with the white elephant, the empiricists and the rationalists.

To them both it says, briefly, that they are taking seriously the

wrong part of Kant. They are using his problem, but, like him, not fully appreciating his answer, mind builds the world. Both schools are permitting their solutions to be rendered meaningless by a dead left-over substratum of the given. The empiricists at least have the virtue of accepting their position openly and emphasizing the given. But to the rationalists it is an unbidden guest that yet they do not drive away. Both schools have philosophy turned into absurdity on their hands as a result. For if there is a dead, inert given, knowledge is just the acceptance of this given and so meaningless because without interpretation. Or, if knowledge is interpretation, it is still meaningless because something more than the given.

They are condemned, that is, to end with the same situation with which they began, an unresolved dualism of the mind and the world. Their mental newspaper is divided into the reportorial columns and the editorial columns, and the two are totally different staffs. But the only adequate journal is the journal of opinion where all news is interpreted and all comments presentation of news.

The two elements, facts and meaning, must be wholly correlative. They can be so only if there is no inert datum. So pragmatism has dropped out this datum and taken seriously the other half of Kantianism, mind builds the world. Knowledge is the active construct of an active mind in which every part is active.

Thus knowing is for the pragmatists, not first a diadic relation, but first an interrelated whole. It is not the bringing together of the two detached elements subject and object, but a situation, prior in its wholeness to the distinctions of subject and object. For subject and object get their meaning only from the knowledge relation, so there must be knowledge before subject and object can be talked of. Thus the diversity of subject and object can not be a barrier to knowledge, as it must be for the empiricists and rationalists, for it arises from knowledge and so presupposes it.

The whole of knowledge can, of course, legitimately be differentiated into subject and object, when it is understood that these are not absolute distinctions but only differentiations within an inclusive whole. Similarly it can be differentiated into fact and interpretation or fact and hypothesis. These distinctions are really in the knowledge situation, for it is a complex interrelated whole.

To call it an interrelated unity may seem to be going back to the dualism we were avoiding. But it seems so only through a misconception of the nature of relations. Through the habit of our own ways of making things, we tend to think of relations always as mechanical relations. And of mechanical relations it is, at least in a sense, true that disparate parts are brought together and related so that the relation is subsequent to the parts which already existed

independently. But this is not the only kind of relation, possibly not the most typical. There is the other kind—exemplified in the living organism, the state, the esthetic object in which the whole as a whole makes possible the parts, so that parts and relations are analyzed out of the whole not built into it. And of this kind is the interrelated unity of knowledge.

The differentiations made in the whole knowledge situation are the result of contrast and conflict. Subject is aware of its difference from object only when there is some catch in the adjustment. Your book is a book to you and you are a person sitting rather uncomfortably only when you begin to get tired and bored. In the moment of interest and excitement the whole universe was just the thrilling series of ideas in which you and the book alike were absorbed. In the same fashion the familiar madonna is a woman and child, motherhood or the origin of the holy church or whatever else it means to you without any distinction of the painted surface and the symbolic significance. But given a new art canvas and the shape of the paint spots is one thing, their possible intention another. There has been a conflict in the knowing situation so the elements of it stand apart.

Such a whole, prior to its parts which have being only in the whole, is never static. It is the mechanical construct that is the fixed final thing. The organic whole is a living changing thing. Even the esthetic whole, which is part mechanical, being a made object, has sufficient vitality to change in the sense of presenting ever new aspects and new meanings. The knowledge whole is just a process.

Knowledge is a constant transformation in which every part is evolving something new and is itself being thereby modified. Even the simplest knowing, recognition, is not dead piecing together of a shape and a name. But a shape suggests a name, the name is given new content by this further example of it, the shape new meanings and relations by being surely understood as that particular thing. And this interaction is more obviously true of explanation. The apple dropping from the tree is only a trivial menace to one's head. Algebraically expressed it becomes the basis of a whole mechanical world. And the algebraic symbols get meaning and vitality only in some such specific incident. Or for the final clearest example, consider the knowledge of acquaintance with a person. Reconstruct the first impression of any one you know now very well, and react your own attitude and manner in that meeting. Then follow along subsequent meetings and make the developmental series of changes up to the present relation. The person has become a different person, you yourself have become a different person, and the friendship has

a changed significance. In any knowledge, every part changes every other, itself and the whole.

It is no refutation of this theory of the completely active knowledge that some of our facts and objects are fixed. That cat, for instance, always means luminous eyes and a meeuw. So much does remain true of the cat, but once upon a time we had to learn that in some such active process as we describe. It is one of the certain things of our universe now, but only because it is the deposit of a previous act of construction. The whole process of knowledge is a series of acts. In a sense each situation up to its culmination is complete because in the moment of culmination fact and meaning are completely interrelated. The cat and eyes and meeuw belong wholly together. But again this assured conclusion is taken up into another situation and becomes part of a subsequent problem. Perhaps we meet a bob-cat.

So as each part of knowing, each identification or explanation is a development, in like manner the whole fabric is an interrelating development. The life of the mind is the history of a process that is a series of little processes.

But what marks off each stage? What, putting it conversely, holds together each stage and makes it a whole? And what also holds together the entire series? The organic structure of knowledge is teleological. Every identification marks the achievement of a purpose. If we did not have the purpose, we would never attempt to bring together the fact and its explanation. In fact, if we did not attempt to bring them together we would never be aware of their discrepancy. Life is full of unresolved conflicts, but they do not bother us until they conflict with our particular plans. In fact they are not really conflicts until some intention makes necessary their association.

So knowledge in any particular moment or in its whole creative movement is a purposive construct. A projected design brings together a fact and a theory. If they fit, the design is carried out without any definition of either fact or theory. If they do not and the plan is balked, then both fact and theory are reconsidered and the plan is modified until they all fit together. Similarly through the whole of life one general tendency is determining the specific purposes, and tendency and purposes are being shaped to fit each other until a unified world of knowledge and act is built.

This means that any act of knowing or of life is a whole and that the whole is shaping the parts. But at the same time the whole is being constructed out of the parts. You have to redefine felines after you meet the bob-cat, so you add new attributes to the eyes and the meeuw. This new larger definition determines the place

and the importance of those two attributes. But those two attributes were essential to make the new definition. Whole and parts work back and forth, each presupposing and determining the other, each actually making the other.

It is obvious that the parts make the whole, but it may be worth while just to say again how the whole makes the parts. Though every purpose of your life had some meaning at the time you formed it, its real significance and value was apparent only when you looked back on it from the point of view of that whole period of your life. Though the dropping apple had some meaning if it hit your head, it is a further thing when you have grasped high school physics. An object is made by its relations and its relations are complete only in the whole.

But meanwhile are we not building on an awfully private world? Have I not one little universe according to the sequence of my purpose and you another quite different perhaps? Yet nevertheless we do live in the same world, and, more significant still, we talk about it. How comes this community, then?

We are not quite as exclusive as we fancy. Your purposes are by no means solely your own business. They are the correlate of actions carried on in a social world. You are cooperating with your fellows in your constructive intelligence. We inherit the meaning of the apple from Newton and know the experience of the bob-cat from a less fortunate neighbor. To a certain degree each man has his own world. Try to make a shipbuilder and a marine painter talk about boats. But above the distinctions is the community of experience. There is a common element in the knowledge of boats even in spite of the difference in interest.

One more protest there is against the pragmatic world. If a man's knowledge is just his own construct, is he not overlooking the real object from which he started? And if he does take it into account is he not distorting it horribly with his whole superstructure of created meanings? And the pragmatist bravely answers: There is not any real object apart from our experiences that enters into our knowledge. Entered in, it is in and a part of our knowledge, and as a part of our knowledge it can not be distorted by knowing.

So, in brief summary, knowledge is a thoroughly active process in which each part acts on every other to create a whole, but the whole, since that is what gives meaning to the parts, is prior to the parts even while it is being created. And because knowledge is a completely active process the paradoxical character of it is best exemplified in the judgment of action, the practical judgment. For when we say that we ought to do something our intention determines what we will do, but the act of doing it has to create the fact and

modify it. Again whole and parts are mutually prior and constitutive.

This is where pragmatism ends. It leaves the world in the course of being created into a continuous whole in a series of steps by purposive minds so acting that they can cooperate to construct a trans-individual world. The world so far as made is an interrelated unity of interdetermining parts with the plan of the whole directing the parts and the parts reshaping the plan of the whole. But the world for pragmatism is still decidedly in the making. The future is undetermined. Mind is building its universe and building it without any guidance from without.

This is what pragmatism asserts. But pragmatism has said more than it has asserted. In fact, it makes a point of denying some of the things of which it almost has convicted itself. For one of its main protests is against any conception of the world as complete, against any limitations on the creative process, any fixed principles to enable reality to share in the constructive process. But how can there be the constructive series without some background of fixed determinate structure?

For you can build a world only if you are sure that that world is amenable to your constructive processes. You can not deal with material on which you can not count. Without the assurance that definite laws are operative and essentially, and so inevitably, operative you will never be able to anticipate the outcome of your manipulations and you must anticipate results to fulfil purpose.

A world to be built of purposive activity must be a predictable world. A predictable world must be a world of definite structure. There are fixed laws that must hold good and have equal reality with the developing process because they alone make possible that process. This is simply to say that the attempt at rationality presupposes a fact world. It is the principle recognized by Professor Dewey when he says that to ask the question whether relations are real or only accidental implies that there already are relations there. If this is true of a part of the world, since the world is continuous, why is it not equally true of the whole? To attempt to establish logical relations presupposes that the world is built on a system of logical relations. Professor Dewey's own commentary on the question has only to be generalized to the whole search for knowledge to make the necessary supplementations to the pragmatic theory.

The search for knowledge is one big question and pragmatism admits that a question presupposes its answer. The process that pragmatism discusses, then, presupposes the already real whole that it tries to deny. And pragmatism has almost admitted this presupposition.

It has almost admitted the position it most vigorously combats and, more interesting still, it has wholly exemplified in itself this detested fact of a structural counterpart. For pragmatism is both a metaphysics and a logic, a metaphysics as the necessary completion of its logic. But metaphysics is the description of the structure of the world of which the logic is the process of knowledge. Thus structure is correlative with process and even pragmatism can not avoid illustrating this principle.

So pragmatism on two counts becomes entangled with a structure. Moreover, pragmatism becomes even further involved with structure. For it not only is a question of structure in general, but has within it a specific description of the type of structure. Its particular type of static real is described in the course of describing its process.

Its method is teleological. Knowledge is a developing purpose creating its own material, reality, in the course of its development. Being purpose, this judgment series is, as we have seen, a complex whole created of parts that are real only in the whole so that they presuppose the whole. The whole thus precedes the process of its own fulfilment, yet must be fulfilled to be real. And in the process of fulfilment every part is interacting with every other. This teleological interdependence of part and whole, created whole and creating interrelating parts, is equally true of any particular instance of knowledge and of the whole unified totality thereof. Always whole reshapes parts, while parts build whole. The completion precedes the course of its own completing, but is real only in being completed.

So pragmatism finds involved in itself not only the general notion of structure, but a specific characterization of that structure. To be sure, the pragmatists buck spiritedly against this unromantic rigidity of reality. They protest because it gives no room for real creation by which they seem to mean total novelty. Yet nevertheless it is there involved in pragmatism.

Pragmatism bucks against this limitation, but it must accept determination. And is not this simply taking the enemy in under another name? If it accepts determination, what remaining reason has it to protest against a fixed total real?

Certainly pragmatism must admit determinism for it admits the continuity of knowledge. This continuity is basic to the notion of its process. You dive into the future from the springboard the past has made. Now certainly the springboard determines a large part of that dive. More directly said, since the problems and the material for the solution of those problems of knowledge at any moment must come from the previous knowledge, surely that previous knowledge determines the future.

Moreover determinism in knowledge would necessarily be basic to pragmatism, for it is, according to its own boast, the logic of science. The one thing that science demands above all others is that the past will make predictable the future, that there are truths to which the future must conform.

So it is senseless for pragmatism to protest against a structural existence on the ground that that means determinism and determinism is limitation. Determinism is already in pragmatism. And further, the fact that it already is in pragmatism makes not only senseless but impossible any protest against the reality of structure. For consider the meaning of determinism. What is the significance of saying that the past determines the future?

The usual first answer is to say that the past contains the future *in potentia*. But this is no answer. It only makes necessary a re-statement of the question, What do you mean by possibility?

When you say a thing is possible you may mean only that you do not know what is going to happen, so you are giving a random guess. But obviously this can not be what you mean by possibility when you say that the future is in the past *in potentia*. That can only mean that that past represents part of a whole network of relations of which the future events are the remaining interrelated parts.

Similarly when you consider directly the meaning of the statement, the future is determined by the past. In a sense that must mean that the future is present in the past. But since it is future it can not actually have been in the past. The only intelligible explanation is that both past and future are parts of a more inclusive whole where they are interdependent elements in one relational system.

Pragmatism can not give up continuity. Continuity involves determinism. Determinism involves a structural whole of reality. So pragmatism is dragged to its pet aversion.

Pragmatism again makes a partial admission of this structure in taking up the Kantian view that objectivity is relation into a whole. But if it is to make this admission it must make it completely. The objectivity can not be simply what the object has already been. Part of the objectivity of an object is what it becomes. What it becomes then is contained in essential to the object. What it has been could depend on relations already established. But what it becomes is determined by the whole network of its relations. Therefore, the whole network must be somehow real.

Pragmatism will reply of course that the objectivity itself is in the making. That the object is not all that it becomes until it does become it. But the object is what it becomes just because it is equally true that it could become only what it was. This is just a

special case of the past determining the future and so the future being really in the past. An object can never be more than it is. All that it is governs all of its relations. The whole system of relations is thus again presupposed by the process.

Pragmatism requires a structure to make possible its process, to make intelligible the specific form it assigns to its process, to make explicable the continuity of knowledge, and to found its definition of objectivity. But even beyond and above all these reasons it needs a structure to explain the trans-individuality of knowledge. Pragmatism trembles on the brink of subjectivism. It tries to leap across the chasm by pointing out that knowledge is a shared social thing. But it can not show why and how it is social without turning back to some rational structure that founds at once knowledge and reality. To return to the figure, it can not get across the fatal chasm of subjectivism without some bridge to convey it. It must have an explanation of the sociality of knowledge. And the only explanation of this is some dependable common structure of the universe which means also of the knowing mind as part of that universe.

Finally, and sixthly, some such structure is involved in pragmatism's criterion of truth. I fancy pragmatism is rather proud of having found a criterion of truth away from the old coherent and correspondence notions. But what it has really done is just to take up the coherence notion anew. It has modified it by taking it only in part. Any specific explanation is true when it fits into the purpose immediately at hand. But pragmatism can not stop with this slice of coherence. Knowledge is continuous. There is a process of the whole that carries on through these specific purposes. The truth is tested in any specific purpose by the consequences. What is the great consequence of the whole purpose? The consequence of a particular purpose is a unified whole in which each part finds an adequate place. Must there not also be a unity of the whole in which each part finds an adequate place? But this whole is not realized in any specific purpose, tested in any specific test. For the specific purposes are always the part purposes. What is the whole to which the process of the whole tends as its goal and measure? As a purpose it can not be merely in the future, for as we have seen it is the characteristic of purpose to precede even its own fulfilment. What then must the continuity of the whole of knowledge mean, but that there is a determining whole of reality?

So, it would seem, pragmatism unless it would rest at a half-way house of theory must admit as the completion of its creative stream of reality also a relational static whole of reality. Really this is what pragmatism itself has admitted in featuring as prime exemplification of its theory of judgment the judgment of practise.

Experimental logic has two main starting points, scientific experiment and the judgment of practise. Professor Dewey emphasizes especially the latter. He advances the logic of this judgment as a new logic hitherto overlooked and proclaims it a dangerous omission because the judgment of practise vividly presents certain characteristics which he finds upon examination to be characteristic of other, if not perhaps all, types of judgment. Hence logicians in overlooking this judgment have misconstrued the general character of judgment.

The striking thing about the judgment of practise is its paradoxical nature. It judges about that which it creates. It is not the estimation of an already existent situation, but is the estimation of a situation in the making and the judgment itself is the chief factor in making that situation about which it is judging. You say, to borrow Professor Dewey's example, I ought to go to a doctor. That refers to a future fact as well as certain given material. It is also at the same time the instrument of the realization of the fact. The decision is what sends you to the doctor. And the whole point of the judgment is reached only after you have gone.

Here is the case of the whole, the judgment, which must be real as the motivating force, real as its plan, and real as a judgment of the whole. But also it is real only as a process, it is being made real. The whole situation is present in the judgment in one sense, yet has to be created in another and at the same time, the present plan is the power that causes its own fulfilment.

The paradox of the judgment of practise that it is at once complete, being completed, and instrument of completion is then extended, though less emphatically in Professor Dewey's statement, to all judgment. For all judgments are seen to be of the same nature. But further must not it be also extended to the whole of reality, for all of reality is a continuous fabric built up by judgments. Then the pragmatic reality is, as we have been trying to prove, both completed and in the course of being made. It is both structure and process.

That the judgment of practise is the type of all judgments in experimental logic is central to the whole theory, as I have before hinted. For the theory is activistic. Knowledge is conceived of as a construct. Thus the judgment of activity is supremely typical. And so the paradox of the judgment is typical. Moreover, this judgment is inevitably taken as typical by experimental logic because, as that logic points out, for one of its basic assertions, knowing is purposive. Now the judgment of action is the explicit formulation of purpose. That is an equally valid name for it, the judgment of purpose. Hence the nature of this judgment will be the clearest evidence for the nature of purposive process like knowing.

The judgment of practise is central to experimental logic because it is the judgment of purpose. Has it not then been taken into account by previous logicians? Is the logic of purpose new to logic? Rather it is central to one previous logic. As to Professor Dewey, so also to Hegel the logic of purpose is the most revealing logic and the most general structure of judgment.

And to Hegel as to Professor Dewey the striking characteristic of purpose is its paradox. He, too, sees that purpose is a complex interrelated whole, a whole controlling its parts, yet at the same time a whole which must be made through its parts even while it generalizes its own fulfilment and guides it. The analysis of the judgment of practise in *Essays in Experimental Logic* has been almost point for point anticipated by the analysis of purpose in both Hegel's *Phænomenology* and the *Logics*.

In fact, has not the whole of pragmatism been anticipated by Hegel? One can almost see pragmatism shudder at the thought. It visualizes its free voyaging into the world of its own creating clamped and controlled by a block universe with no hope of novelty ahead. It is always hard to break a colt to harness.

But after all, is the Hegelian harness so obnoxious as our pragmatistic colt supposes? Is it a rigid foreign thing designed solely to limit? Is it not rather as a matter of fact just the inherent tendency or purpose or whatever other pragmatic name you care to disguise it under? Is it not really, as we have suggested before, just that which makes the colt useful and humanly significant?

But first to substantiate our statement that pragmatism is Hegel resaid or rather a part of Hegel resaid. The point is clearest in the *Phænomenology*. The *Phænomenology* is the description of the development of judgment. It begins as does pragmatism with a unified situation. Out of this situation is analyzed fact and identification, subject and object. These elements identified out prove ill adjusted and the situation goes through the process of adjustment, resulting in another situation. This situation again falls into its parts, which, being not fully congruent, interact until another moment of stability is established in a further stage, and so on.

Differentiations within the whole are essential. They are made by contrasts. Anything is defined by its negative relations, its conflicts with that which it is not. Contrasts, or more accurately discrepancies, are also the source of the movement of judgment, a movement which is continuous, though continuous through a series of stages. The organization of each stage is teleological and also the organization of the whole. And the stages are distinguished by the different characters of the purposes that direct them. Each stage makes its contribution to the whole, but the progress of the whole

in turn bends back and modifies the stages that have gone before. The movement is not a subjective, but a transsubjective reality. And it is not an externally imposed movement, but inherent in the process.

Such, with the almost absurd inadequacy of unavoidable brevity, is the movement depicted in the *Phænomenology*. And so far it parallels point for point with the logic of experimentalism. It parallels, but, of course, it differs too.

One difference that the pragmatists themselves would probably emphasize is that the logic of experimentalism is specific, that of Hegel general. Pragmatism, that is, rests on the specific purpose as determining its particular situation. It is because we have just one particular aim that we are concerned with such judgment. Hegel they would probably count a complete alien because he talks about such abstractions as categories.

But this is not as great a difference as it would seem. For in the first place the *Phænomenology* does not talk about bare categories, but does describe very specific situations. It deals with the scientist, the Greek citizen, the Christian, and so forth. Of course, it deals with them as types and deals with them as examples of situations that could be reduced to terms of categories. But yet it is dealing with specific facts and so proving that facts are the basis of its logic.

And in the second place no logic can be really very specific anyhow. For it is a statement of the conditions of knowing and those conditions must be withdrawn from particular details to be considered in their essential characteristics. Even *Experimental Logic* talks about Purpose, not this purpose or that, and about Fact rather than any particular fact. The main difference between the generalizations of pragmatism and the generalizations of Hegel is that Hegel has created a new vocabulary for his that makes the objects of his discourse seem wholly foreign.

Similar to the distinction of the specificalness of pragmatism and the abstract generality of Hegel is the distinction in their starting-point for the definition of a person. Pragmatism is talking about the biological person and turns back to biology for corroboration. Hegel talks of the logical person and makes it part of the business of logic to formulate the characterization of that person.

Again the difference is more apparent than real. For the logical person is not other than the biological, but only the generalized formula for the most central facts about the person, revealed not only by biology, but also by psychology and sociology. The logical person is a teleological whole realizing itself through an organized multiplicity of activities in a social milieu essential to it because con-

stitutive of its content of living. The biological person is a man following out a pretty well-defined purpose which involves many particular purposive undertakings in a social world of which he is part and to which he must adjust himself. It is the same man in different words.

A third point of difference is in the statement of the nature of the motive force that keeps the process of knowledge moving. For pragmatism the individual person's dissatisfaction causes him to readjust the definition of his fact. For Hegel there is some inherent force within the process that brings together the factors and makes them readjust themselves to each other until friction is minimized. But again this is but another phase of the difference in statement. For pragmatism, as for Hegel, the person is a force within the situation that makes for its development. Moreover, the sole motivation can not come from the person, for really it is the character of the fact and of the interpretation also that makes necessary the readjustment and decides the direction of that readjustment. Hegel with his inherent movement has simply generalized this same fact.

The plan of Hegel's development movement is, in one respect, quite different from that of the experimental logic. For Hegel has delineated a whole hierarchy of kinds of purpose. Pragmatism has made but little attempt to group its purposes into typical classes, describing the process of judgment only as the sequence of particular purposes regardless of their type.

Yet pragmatism has recognized that there are different types of purpose, different classes of judgments. There is a difference for it between the common sense judgment and the judgment of science. There is a difference again between both of these and the judgment of value.

And pragmatism has already hinted here and there at some notion of the subordination of types. The scientific judgment is evolved from common sense and supersedes it because superior to it. These again are both subordinate to and contributory to the judgment of value. And one pragmatist has suggested that probably within the realm of moral value there is an hierarchy of valuations. This would in a fragmentary, undeveloped way express the Hegelian idea of seried types of judgments, each completing the type below it and preparing for the one above.

The main difference between the pragmatist series and the Hegelian would be that within the first there would be no place for any experiences of doing and suffering, only account given or deliberate reflection; whereas Hegel recognizes a logic of the unreflective also. There is actually present in all experience some structure that should be analyzed and stated in general terms. And this

structure will be continuous in kind with the higher reflective experiences even if not deliberately formulated in judgment, because in any experience the person is involved and so the mark of the person is upon it.

Pragmatism in making its own statement of its divergencies from Hegel would, I fancy, insist upon a point that I have not even mentioned in summarizing the theory. For pragmatism the judgment is complete only in the act and the act is the criterion of the truth of the judgment.

It has seemed unnecessary to mention this in spite of the fact that the pragmatists themselves have made a special point of it, for really the only function of the act is to establish the unity of the various parts of the judgment that was expressed in the purpose. The significant thing for logic, then, is not the act, but only the purposive unity to which the act is instrumental. And truth is coherence in this purposive unity. To this Hegel heartily subscribes.

And it is not even necessary to thus minimize the act to make a correspondence with Hegel. For Hegel himself would never minimize it. Who else but he emphasized that the outer is only correlative of the inner, the inner of the outer and the two must go together? Who has so forcibly insisted on the application of this that the intention is unreal without the act even as the act is meaningless without the intention? Hegel would agree with pragmatism that the act is the necessary fulfilment of the judgment.

The minor differences disappear upon examination. We come now to the crux of the two systems, the problem of time. Time is central to experimentalism. One of the most emphatic points of the theory is that time is real, time essentially real, the process of judgment necessarily a temporal process. In this it would seem to directly oppose Hegelian idealism.

As a matter of fact it is a problem just how far this emphasis on time does oppose Hegel, for it is a problem just what the place of time in Hegel is. His statements about it are obscure and sometimes contradictory. But this much is at least clear. He by no means completely denied time, but in the *Phænomenology*, at least, made one of the series of judgmental processes temporal. The development of the specific detailed stages is a development in time in that account, while the general types of mind are coexistent.

Perhaps the real question to ask in this problem of time is, not what is the place of time in Hegel, but what is the necessity of time in experimentalism? The problem is, how far must the logical statement of the nature of experience take account of time? Would the disregarding of time make any significant difference in our account of knowledge?

Experimentalism mentions time very frequently, but really says very little about it. Being a logic, it deals with a relational situation, parts interconnected in a certain order into a whole. The interconnection of these parts may occur in a certain temporal sequence, but it is not the sequence that is important, but is the place in the whole. In fact the sequence can be reversed and the logic of the position be unchanged. The scientific process ordinarily begins with a fact that means a theory; the two, then, are modified to suit each other until the theory seems congruous, and an act is thereafter performed, the experiment, to prove the adjustment of fact and theory and finally establish it. But is not there also a case where the theory is the starting-point, no one specific fact having called it forth, but only the cumulative suggestion of all experience? Experiments are performed to get facts to fit into them and the final test is not any specific experiment, but the congruency of the theory with a whole knowledge system. In short, it matters not in what order in time the elements occur. The determining issue is the organization of them into this type of whole. Not time, but relations is the subject-matter of logic, and of experimental logic at that.

Even the difference of time between the experimental and the Hegelian systems disappear. There remains but one distinction making a great cleft between the two, the question whether there is, in addition to the real process, also a real stable structure. We have tried to show that pragmatism can not logically retain even this distinction, that she must accept the concept of the stable structure because it is already involved in her theory. If she does accept it pragmatism becomes one with Hegelianism. But pragmatism not only continues to be unwilling to dissolve into Hegelianism, but even makes redoubled efforts to combat that type of idealism. It will be necessary to see what offensive positions she can take against that theory in order to find out whether they will suffice to defend her from absorption into Hegel.

Pragmatism seems to have two main protests against idealism, first, that it is dualistic, second, that it denies all distinctions. Pragmatism points out its superiority in that, first, it is not dualistic, and, second, that it leaves room for all manner of distinctions. Now either idealism is not dualistic and so has no distinctions so that only the second protest of pragmatism holds, or it is dualistic and so has distinctions so that only the first of the arguments holds. Or it can be both dualistic and have distinctions and yet be monistic and transcend its distinctions. If idealism is not to be permitted a dualism, it is difficult to see how pragmatism justifies its distinctions. Or if pragmatism is not to be permitted an underlying unity it is still more difficult to see how pragmatism can hold on to its unity.

And finally if idealism is not to be permitted to keep both distinctions and unity, it is impossible to see how pragmatism can hold on to both. In short, idealism and pragmatism stand or fall together, which tends to corroborate the theory that they are essentially the same.

For the sake of clarity and conviction the points have to be dealt with in more detail. Pragmatism accuses idealism of dualism. Idealistic logic begins with a mind on one side and an object on the other, just as Kant did, and then undertakes the impossible task of bringing them together. The criticism has been directed specifically at Lotze and Bosanquet. Of them it may or may not be true. That is of no moment in the present discussion. Certainly it is not true of Hegel. He, like the pragmatists, begins with a knowledge situation that is a whole through and through within the realm of knowledge.

Hegel, then, not being guilty of dualism, must be thrown to the other horn of the dilemma. He has a world without distinction of subject and object. But he has that world only in the same sense that the pragmatists have it. He has a knowledge situation known through and through, but with distinctions in it made by conflicts.

The pragmatist retorts that the difficulty for idealism is that in that theory these distinctions are fixed distinctions, final stable things. It is one of the main contributions of Hegel's logic to have emphasized the point that no distinctions are fixed but all are transcended and taken up into a more inclusive unity. The distinctions are fixed in the sense that they are still discoverable in the larger principle that resolves them, if that larger whole is analyzed. Does pragmatism deny this? But they are not fixed in the sense that they are insuperable. This is *aufhebenheit*.

Another protest is made, that for idealism it is the same object that common sense knows and that science knows. Hence the difference between the air of the man in the street and the air of the scientist is incomprehensible. This is really just a specific application of the dualism-fixed distinction criticism. If the object is given as a fixed, established thing two disparate knowledges of it do make an insoluble problem. There is no such problem for Hegel. It is the business of his logic to show that the object is the same, because one continuous development of knowledge has brought scientific air out of common-sense air; and different because of the progress of knowledge from common sense to science. This is pragmatism's own reply.

But pragmatism has another retort in a restatement of the dualism criticism. The place of an object external to knowledge is taken in absolute idealism by the absolute. The dualism here is between the absolute as a self-existent, eternal real and the finite subject as

involved in a process. Though distinctions may be resolved in the process they are fixed in the absolute. Though one object may be as different as the air of common sense and the air of science in the process of knowledge, it is just one fixed definite thing with a fixed place and relations in the completed system of the absolute. So we are brought back to the dilemma of any dualism in knowledge. Either knowledge must be of the fixed object of the absolute or of the changing object that appears in the process. If the former, since we can know only by the process, we can never have knowledge. But if the knowledge is the knowledge gained in this process, then it is not knowledge of the real, which is the fixed entity of the absolute. So in what sense is it knowledge?

Idealism stands or falls with its ability to meet this criticism. Its theory demands both parts of the dualism. To make the process intelligible the structural unity must be retained. The structural unity is actual in life only through the process. The two must both be kept to make an adequate theory of the universe. But it will not be an adequate theory unless the two can be made coherent. Can this dualism be bridged?

The dualism of absolute and actuality can be and is bridged in Hegelian idealism. And it is bridged simply because there is no dualism there. Absolute and actual process are not two segments apart. They are two aspects of one fact. The structural relations are present in the process giving it its form. The process is the carrying out of that structure and takes place only in the structural background. The absolute is the statement of the relational system present in this world. The events of this world or the judgments of knowledge are different specific cases of these general relational types. The system of relations that is called the absolute is all that makes possible the processes of the world and of thought. Those processes are all that make actual those relations.

Thus idealism accepts the pragmatic retort that the knowledge of an object is only the reproduction of a fixed object, that the process of judgment is only an approximation to the absolute. Judgment is the establishing of relations. The possibility of establishing relations rests on the reality of a relational structure in the universe. Knowledge must be reconstruction of a real character of the world.

But in accepting this pragmatic criticism idealism denies that it is an adverse criticism. Pragmatism seems to feel that the presence of a fixed object is a drawback for three reasons. First, does it not throw us back into the old subject-object dualism? Second, does it not limit the extent of knowledge, that is, establish a point at which further knowledge is impossible because the fixed object is fully explored? Third, how does it leave possible the difference in any object

for common sense and for science? Pragmatism protests in the name of a unified knowledge situation, in the name of endless possibility of discovery and in the name of the object's disparity in different knowledge contexts.

The fixed object of idealism is really open to none of these objections. There is no dualism between the object in the absolute system of relations and in the judgment because that judgment is simply the statement of those relations which are not different in kind, but simply the skeleton of knowledge. The fixed object does not, in the second place, limit the range of knowledge but alone makes that knowledge possible. How could you know a thing that had no determinate character? And there is possibility for endless development of knowledge because in the system of the whole any one object has infinite relations. And third, there is a real difference between the object of common sense and that of science, even while it is one object, because the two ways of knowing are two stages in the statement of the object's relations.

There is even here no great disparity between idealism and pragmatism. For pragmatism, too, it must be the same water that the scientist drinks, that he hears singing in the brook, and that is H_2O . And these various aspects of the one water are only different relationships, relationships that must belong to the thing and so somehow be prior to the knowing process. The apparent gap between pragmatism and idealism is simply due to the fact that pragmatism has not yet made clear, to my mind at least, how it is the same water and in what way the relationships can be established for this water.

Thus idealism admits a dualism that yet is no dualism. The world is both a structure and a process and the structure is the structure of the process. This throws it onto the other pragmatic criticism. If the dualism is not real, but all of reality is this logically interrelated whole, is not judgment, the establishing of logical relations, wholly futile? If the world is rational why set out to make it rational? Or, more specifically, if the world is so rational that a dialectic theory of knowledge like Hegel's can show its rationality, does not that dialectic demonstration do the work of knowledge once for all, and make further judgment unnecessary?

To consider the latter form of the criticism first, is it true that a dialectical theory of knowledge like Hegel's completes science forever? Assuredly this is a caricature of Hegel. For the theory of the dialectic is only an exposition of the general types of relations to be found in reality and knowledge and in the interrelation of those relations. Pragmatism does the same thing in a much smaller way when it delineates the logic of the judgment. Does the information that a purpose makes the mutual modification of a fact and of

an interpretation until they are congruous render superfluous all adjustments of facts and their interpretations? Then no more does the knowledge that the defects of the sense judgment demand its development to the perceptual judgment make unnecessary sense and percept judgments. Logic is the statement of characteristic relational forms. Knowledge of the forms does not supplant utilization of them.

The dialectic theory is in application a method even as is the pragmatic logic. It is a way of organizing life and knowledge. The consciousness of the method is not essential for knowledge in either theory, for the logic is only the *ex post facto* analysis of knowledge. But knowledge is probably made more efficient by an explicit awareness of the method. To this surely pragmatism would agree.

The objection, then, that for Hegel logic is to take the place of all knowledge is obviously absurd. But this does not meet the general criticism that in a rationally made world rational criticism is futile. The answer to that is of course a further consideration of the Hegelian system. The established whole is infinite. The serial reconstruction by the judgment is finite. Since the finite individual as finite does not possess the infinite judgment, the reconstruction of reality is not futile for him.

The pragmatist asks in return why the absolute, if he is complete, wants himself reconstructed in this inadequate fashion by finite bunglers. Of course the question is absurdly anthropomorphic. The problem is not why has the absolute this idiosyncrasy, but is it a fact? Is the universe a fixed structure of relations that is being constantly worked out in a developmental process?

If it is, it is to be frankly admitted that it is a paradoxical universe? But at least it is a familiar paradox and a paradox to which the pragmatists can make no valid objection because it is their paradox of the judgment of practise. It is, in fact, the paradox of all relations. For a relation must be at once relatedness and relatingness.

As for the question of futility of rational thinking in a rational world, idealism has but to reply to pragmatism: "It may cut the nerve of the thought process to put it in a rational world, but to put it in an unrational world is to cut its throat. How know by a rational process a non-rational fact?" Thus if the pragmatist criticism is right, thought is either futile or impossible. And so we come back to the old dilemma pragmatism charges against empiricism and rationalism. Knowledge is either unnecessary repetition or meaningless manipulation. And pragmatism has chosen the latter horn of the dilemma.

But though pragmatism lands in a dilemma, modern philosophy is

deeply indebted to it. For it has done the service of emphasizing the need of concreteness in philosophy, of relation to actual contemporary fact, and of an expression free from ambiguous technicalities.

Modern idealism in particular owes gratitude to pragmatism. For modern idealism has been in danger of floating off into the supernaturalism with which pragmatism charges it. And pragmatism, with its emphasis on the specific and factual, will help bring it back. For pragmatism is the expression of the one part of idealism, the element of actualism. The question for pragmatism is, can one part stand alone?

PHYLLIS ACKERMAN.

NEW YORK CITY.

SOCIETIES

NEW YORK BRANCH OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

THE New York Branch of the American Psychological Association met in conjunction with the Section of Anthropology and Psychology of the New York Academy of Sciences, on Monday, February 25, at 8 P.M. in the psychological laboratory of Columbia University. The following papers were presented.

The Influence of Practise on Correlation of Abilities.—GEORGINA STICKLAND.

The relative lowness of correlations found by most investigators may be caused, according to Professor Hollingworth, by the fact that initial ability (which is affected by such factors as chance variability, inequality of previous practise, *etc.*) rather than final capacity has been measured. In the present experiment an attempt was made to measure an approach to final capacity. A homogeneous group of fifteen college women practised color-naming, tapping, adding, mental multiplication, and word-building tests for one hour a week for eight or nine weeks. Correlations between average records were computed at different points of the practise period. A gradual increase in coefficients was found which was followed by a slight decrease toward the end of the experiment. Multiplying—the most difficult test in which least approximation was made to a practise limit—correlated least well. Individuals' best records—the most accurate index of final capacity—showed a relatively high correlation. Practise curves showed an initial rise and a subsequent lowering, which latter occurred at the same point as did the decrease in coefficients. It seemed to the experimenter that there might be a causal

relation of some sort between these phenomena. Where practise improves performance, correlations increase. Where there is a slump in effort, interest—where accidental causes lower proficiency—or where something approaching a practise level has been reached, coefficients remain as they were, or show a slight decrease.

The similarity of the subjects and the dissimilarity of the tests made these results fairly convincing. But the small number of subjects used make it impossible to form, on the basis of this experiment, any definite theory. Further work which is now being carried on along this same line may serve to confirm or disqualify the hypothesis advanced here.

A Psychological Analysis of Play.—CLARA F. CHASELL.

Readiness of neurones, as defined by Professor Thorndike, has been adopted as the least ambiguous term to utilize in a definition of play. Activity is accompanied by readiness of neurones as a continuous variable ranging from negative through neutral, or zero, to positive readiness; but only that activity which involves positive readiness of neurones is play. Whether one response or another will follow from any given stimulus, other things being equal, depends solely upon the relation between the readiness of the neurone systems involved. Factors influencing readiness are maturity, sex, race, family, environment, habit, instinct, mental set, physiological changes, and intensity of stimuli. Most obvious of these, perhaps, is mental set, or attitude, in terms of which it would be possible to formulate a complementary analysis of play.

Preferably, work may be thought of in terms of product produced (Thorndike). Thus drudgery, considered as activity of neurone systems unready to conduct—not work—is the antithesis of play. Further, recreation and fatigue, from the standpoint of a single synaptic series, may be considered antithetical terms.

From the pedagogical standpoint, this analysis of play finds sanction in the current doctrine of interest. The modern school seeks to increase the satisfactions actually involved in school processes.

A Note on a Mathematical Prodigy.—LORLE I. STECHER.

A boy aged six years and seven months was examined at the Mental Clinic, New York City Children's Hospital and School at Randalls Island. This child who graded seven years and five months by the Stanford Revision of the Binet with an I.Q. of 113, was able to add long columns of 1 and 2 digit numbers as fast as he heard them pronounced, and to subtract with equal rapidity. He had had only one month's instruction at school, therefore this facility in

mental arithmetic was spontaneously developed. With the exception of one brother, he was the only child in a large family whose mentality judged by school progress was above the average. The family history showed on the father's side a number of individuals of good mentality, including numerous rabbis and one person supposed to be mathematically inclined. His performance, although remarkable for a six-year-old child, hardly compares with the recorded arithmetical feats of such prodigies as Ampère and Gauss.

Families of American Men of Science.—R. BRIMHALL.

A continuation of a study begun by Professor J. McKen Cattell of the distinguished relatives of a group of 1,000 of the most distinguished American men of science. The number of distinguished relatives in each degree of relationship not beyond second cousins, except in special families, and degree of distinction are being determined. Degree of distinction is being determined by biographical accounts of individuals in "American Men of Science," "Who's Who in America" and Appleton's "Cyclopedia of American Biography." In the last named case, the amount of space given to the biography is used as a measure of degree of distinction. Already, some four hundred relatives not more remote than first cousins have been recorded according to these standards. The relatives of the wives of the men of science are being treated according to the same method.

Redintegrative Mechanisms in the Psychoneuroses.—H. L. HOLLINGWORTH.

Reference was made to various attempts to formulate in psychological terms the symptoms of the psychoneuroses. Special attention was called to the psychoanalytic concepts, such as symbolism, transfer, siphoning, *etc.* Cases were cited from normal perception and learning, from primitive magic, from illusions, and from esthetic reaction, showing the importance of a type of reaction which represents a combination of Hamilton's "redintegration" and Thorndike's "partial activity." The "conditioned reflex" was shown to be a typical case of this mechanism. In general the mechanism takes the following form. Some definite reaction, of speech, conduct, emotion, *etc.*, follows upon a total stimulus or situation. Thereafter the occurrence of a portion of the original stimulus serves to reinstate the reaction previously associated with the larger situation. Clinical examples suggested that this mechanism adequately formulates many of the symptoms of the psychoneuroses in a much clearer way than do the concepts of symbolism, transfer, siphoning, *etc.* Adequate control of this mechanism is what is called sagacity. Sagacity and

intelligence were distinguished. Amentia is a lack of intelligence, whereas hysteria is a lack of sagacity.

H. L. HOLLINGWORTH,
Acting Secretary.

COLUMBIA UNIVERSITY.

REVIEWS AND ABSTRACTS OF LITERATURE

Manuel de Psychiatrie. J. ROUGUES DE FURSAC. Cinquième Edition. Paris: Librairie Félix Alcan. 1917. Pp. 509.

Treatises on psychiatry may be divided into several classes—*viz.*:

1. Systems of psychiatry of a really creative and constructive type, like Kraepelin's work with its successive modifications and additions.

2. The less elaborate text-book, yet still bearing the stamp of originality, such as the treatises of Krafft-Ebing, Tanzi and Biachi.

3. Contributions to psychiatry which are interpretative rather than descriptive of mental disorders, such as Bleuler's monumental works on dementia præcox and schizophrenic negativism and Freud's interpretation of the paranoiac mechanism.

4. Text-books intended primarily for the student, where interpretation is sacrificed for description and where mental diseases are more or less classified like a botanical herbarium. It is to this latter class that the book under review belongs.

The fact that this book has gone through five editions in the original and several editions in English translation attests to its popularity, and for a brief treatise on mental disorders, written with the usual clearness of French medical works, we know of no more satisfactory work. Its chief fault is that it is too descriptive and not sufficiently interpretative and is apt to leave the student with a feeling that mental diseases are cut and dried entities like different varieties of trees and that the symptoms of mental diseases are the more or less haphazard and accidental vagaries of a disordered mind. Modern psychiatric analyses have shown that the content of a psychosis is not a wild and disordered outbreak of mental symptoms, but is either the logical outcome of a failure to adapt the personality to new situations in life or arises from circumstances and conditions of which the individual is unaware, that is, an unconscious mechanism. Careful psychological analyses can establish these principles beyond a doubt, such as the reviewer has done, for instance, the psychoanalysis of the somnambulism of Lady Macbeth.

Psychiatry has long ago passed the point of mere clinical description and attempts at various classifications, since the former was

bound to mislead and the latter often reached a point of artificiality, based either on pathological evidence, on the course of the disease or on a more or less illusory grouping of symptoms. It has reached the more fertile ground where the content of the psychosis is being carefully interpreted, as has been done so well by the psychoanalytic school. For instance, in the book under review, in the descriptions of the sexual perversions and the psychoneuroses, nothing is said about the etiology of these disorders beyond a vague reference to "heredity" and "general enfeeblement of the organism," whatever these terms may connote; neither is there any reference to the remarkable curative results of psychoanalysis.

The section on the prevention of mental diseases is one of the best and most comprehensive in the book. The account of the efforts in various countries to enforce prohibition along legislative and educational lines is admirable, likewise the insistence placed upon the susceptibility of different individuals to varying amounts of alcohol.

The classification of Kraepelin is followed in the main, as being the most logical of recent attempts, the result of years of clinical experience, although the paranoiac states are given their usual French designation. It is doubtful if there exists a pure exhaustion psychosis any more than a so-called nervous exhaustion, and happily the latter is being gradually relegated to the limbo of forgotten theories, a fate which will probably soon overtake the so-called psychoses of exhaustion.

He adopts Bleuler's term of "schizophrenia" instead of dementia præcox, as expressing more clearly the exact nature of the disorder. Unfortunately he does not mention Bertschinger's remarkable contribution to the processes of recovery in schizophrenia. It is well known that a certain percentage of these cases get well, but *how* they get well and *why* some recover and some do not, is a most important question even for the student, and it is hoped that this serious omission will be attended to in a future edition. In the section on the nature of the disease no mention is made of Bleuler's really epoch-making contributions to the inner mechanism of schizophrenia and schizophrenic negativism, on which all future psychotherapy of dementia præcox must be based. To state that the treatment of dementia præcox is purely symptomatic, as is done in this book, is a failure to appreciate the really curative results in early cases of the disease by the psychoanalytic method of treatment.

The portions devoted to the paranoia question are likewise inadequate, since there are omitted the essential mental mechanisms which underlie every paranoiac state and which form the basis of the paranoiac misinterpretation of actual occurrences. As a contrast, the chapter on paresis is admirable from a clinical and pathological

standpoint, but here again there is no mention of the attempts at a specific therapy of the disorder, which, while not curative, at least seems to retard the progress of the disease.

On the whole, however, the book is a good one for the student of psychiatry who has had no previous training on the subject, and yet even the student will in time, if he observes and reads, be interested less in artificial classifications and more in psychological interpretations of mental diseases, on which the progress of psychiatry, now as in the future, must be based.

ISADOR H. CORIAT.

BOSTON, MASS.

Naturalism and Agnosticism: The Gifford Lectures delivered before the University of Aberdeen in the Years 1896-98. JAMES WARD. Fourth Edition. London: A. & C. Black, Ltd. 1915.

This edition differs from its predecessors mainly in the fact that the twenty lectures now appear in one volume. In order to make the volume convenient to handle the detailed table of contents has been omitted. The rather full index makes the loss one easily borne. Besides making numerous small emendations the author has added about a dozen explanatory notes.

But nothing important has been done to bring the work up to date. Of course those who regarded the author's criticism of agnosticism and naturalism as definitive when it first appeared will maintain that the book is as much up to date now as it ever was. These lectures were not intended to develop a positive contribution to philosophy; the contribution that Professor Ward has to make to philosophy is given in *The Realm of Ends, or Pluralism and Theism*, the Gifford Lectures of 1907-10, published in 1911. The particular set of lectures now before us again is almost entirely critical, and it might be said that the views discussed and found wanting have not changed since they were subjected to the unsympathetic examination given them by Professor Ward. Such a statement would hardly do justice to the facts. Mechanism and naturalism have changed very considerably in the meanwhile; and if they have by this change ceased to be mechanism and naturalism, there is at least something left as the result of this change. This something remains to be disposed of before a philosophy can gracefully recommend itself to the world on the ground of the failure of all its rivals.

One need only refer, for example, to Professor Jennings's work in the philosophy of biology to find a view that is not naturalistic and mechanistic in Professor Ward's sense of the term, but neither is it anything like Mr. Ward's teleology. The same may be said of Dewey's naturalism.

I find in Professor Ward's treatment of his opponents the trouble that I find in Bergson's; both of them like to put their victims on the bed of Procrustes.

E. B. MCGILVARY.

UNIVERSITY OF WISCONSIN.

JOURNALS AND NEW BOOKS

MIND. October, 1917. *The Medieval Doctrines in the Works of Donne and Locke* (pp. 385-392): FRANÇOIS PICAVET. - A notice of theses done at the École des Hautes Études, one by M. Krakowski maintaining that Locke's metaphysics and theology have their roots in the Middle Ages and that his thought marks no break in continuity; the other by Miss Ramsay showing the medieval and Plotinian source of the thought of John Donne. *Socrates and Plato* (p. 393-406): J. A. STEWART. - Defining Platonism as "the faith out of which 'the Doctrine of Plato' as prophetic message" issues, the question is asked how Platonism is to be affected by Professor Burnet's book, *Thales to Plato*. The view is that Professor Burnet has given too much in the way of a background environment, and too little of Plato as a personality. *Recollection, Association and Memory* (pp. 407-427): J. LAIRD. - Adopting Bergson's distinction between pure memory and memory as motor habit, and the neo-realistic doctrine of simple apprehension as non-representative and as involving a complete duality of process of apprehending and object apprehended, the paper proceeds to show that there may be direct and simple apprehension of past events. *What is Formal Logic About?* (pp. 428-447): ARTHUR MITCHELL. - Finds the subject-matter of logic to be *meaning*, the status of which as public, common and objective is explained. Every meaning has character, a locus, and a co-functionality between them. Finds the fundamental principle of logic to be "this co-functionality between character and locus, in meaning." *Discussions: Mr. Russell's Lowell Lectures*: D. M. WRINCH. *On Relevance*: Alfred Sidgwick. *Formalism and the A Fortiori*: F. C. S. SCHILLER... *Critical Notes. New Books. Philosophical Periodicals.*

REVUE DE MÉTAPHYSIQUE ET DE MORALE. November, 1917. "*La religion*" de M. Loisy (pp. 617-626): A. DARIN. - A new development of the religion of humanity. *De la nécessité médiate et de la nécessité immédiate* (pp. 627-692): L. DAURIAC. - A study of two types of necessity in order to clear the way for an understanding of the contingency of the categories. *Les ordinaux transfinis de*

Cantor et leur définition logique (pp. 693-709): A. REYMOND. - Although the words of Poincaré may be true, "that there is no hope of seeing an agreement established between the pragmatists and the Cantorians," the author believes that he can show that the Cantorians' theory of transfinite ordinals is not without contradictions. *Enseignement. La rénovation de l'école*: E. RIGNANO. *Questions Pratiques. De la liberté en temps de guerre*: G. GUY-GRAND. *Nécrologie*.

Goblot, Edmond. *Traité de Logique*. With a preface by Boutroux. Paris: Librairie Armand Colin. 1918. Pp. xxiii + 412. 8 fr. (plus a temporary advance of 20 per cent.).

Jastrow, Joseph. *The Psychology of Conviction: A Study of Beliefs and Attitudes*. Boston and New York: Houghton Mifflin Company. 1918. Pp. xix + 387. \$2.50.

Leighton, Joseph Alexander. *The Field of Philosophy: An Outline of Lectures on Introduction to Philosophy*. Columbus, Ohio: R. G. Adams & Company. 1918. Pp. xii + 414. \$1.50.

The Imperial Japanese Mission, 1917: A Record of the Reception Throughout the United States of the Special Mission Headed by Viscount Ishii. Publication No. 15 of the Carnegie Endowment for International Peace: Division of Intercourse and Education. Washington: Byron S. Adams. 1918. Pp. vi + 125.

NOTES AND NEWS

We are glad to circulate the following letter, addressed to all admirers of Professor Royce:

"Some of the personal friends and colleagues of Josiah Royce, who believe that his work and his character made a deep impression upon a wide circle of men and women, and that he became in fact the center of a large spiritual community, many of whose members were unknown to him, as he was unknown personally to them, feel that the reverence and affection which went out to him as a thinker and as a man should be embodied in some appropriate memorial of him at Harvard University, where he expressed himself in characteristic speech and writing for thirty years.

"It is proposed, with this end in view, to create a fund of \$20,000, to be known as the Josiah Royce Memorial Fund, the income of which shall go to Mrs. Royce during her lifetime, and thereafter to the Department of Philosophy of Harvard College, to be used in such ways as the Department shall decide from year to year.

"There are evident reasons why this appeal should not be delayed until the return of normal conditions, natural as such postponement might on some accounts appear to be. And further, the due honoring of our moral heroes, though a privilege under all circumstances is especially a privilege and a duty in heroic times.

"If you desire to subscribe, please send your check to Charles Francis Adams, Esq., Treasurer of Harvard College, 50 State Street, Boston.

"Charles W. Eliot

"Charles P. Bowditch, President, American Academy of Arts and Sciences

"John Grier Hibben, President, Princeton University

"R. F. Alfred Hoernle, Chariman, Department of Philosophy and Psychology, Harvard University

"Lawrence J. Henderson, Secretary, The Royce Club

"James J. Putnam, M.D.

"E. E. Southard, M.D.

"William Ernest Hocking"

The following psychologists have received commissions in the sanitary corps for psychological testing in the army: Albert T. Poffenberger, instructor in psychology, Columbia University, captain; Garry C. Myers, department of psychology, Brooklyn Training School for Teachers, lieutenant; Roberts B. Owen, instructor in philosophy, Columbia University, lieutenant; Schachne Isaacs, instructor in psychology, University of Cincinnati, lieutenant (psychological research in high altitude aviation).

Professor M. E. Haggerty, of the University of Minnesota, has received a commission as major in the sanitary corps of the army. Major Haggerty will be in charge of psychological work in connection with special hospitals and the re-education of wounded and disabled soldiers.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

MECHANISM AND CAUSALITY IN PHYSICS¹

THE fundamental questions of physics which from the days of Aristotle to those of Descartes and Kant supplied so much of the stimulus and substance of philosophical reflection, are now receiving scant attention from professional philosophers. We are now, indeed, witnessing the rapid passing of the old conception of philosophy as the official critic of the fundamental principles and presuppositions of the special sciences. As the special sciences have developed and have become more and more technical, philosophers have become more modest and grown content to cultivate a special field of their own, sharply distinguished from that which is the proper domain of any other academic department. Now, while modesty is undoubtedly a precious virtue, it is also frequently an easy excuse for evading a difficult task; and while the meticulous delineation of fields may be a necessary postulate of academic life, it may, perhaps, not always be the most effective method of gaining philosophic insight. It is certainly futile to appeal, as is the manner nowadays, to the "method" of science unless we take the trouble to become familiar with what are actually the methods of the sciences; and it is hazardous to accept the "results" of the sciences unless we know how much unconscious, but none the less antiquated, metaphysics has entered into their make-up. It is a distinguished physicist who has lately reminded us that a metaphysics is no sounder because it is held unconsciously or professed by one who is not professionally responsible for it.²

As the term mechanics has been freely used and abused, a few distinctions at the outset may clarify the discussion. In the first place, we must distinguish between the mechanical and the physical. The term mechanics as used by physicists³ denotes that branch of

¹ Read before the American Philosophical Association, December, 1911. This study forms part of a book on *The Principles of Natural Science*, whose publication has been unavoidably delayed.

² Maclaurin, *The Theory of Light*, p. 7.

³ Continental usage has been fixed in this respect since Varignon's *Nouvelle Mécanique* (1667). In England the term mechanics is sometimes restricted to the study of machines, but Thomson and Tait (*Elements of Natural*

physics which studies the motions of masses (considering equilibrium as a special case or limit of motion). Now there are physical phenomena such as light, magnetism, *etc.*, which are not *prima facie* phenomena of motion, and no physicist claims that all these have, as a matter of fact, been satisfactorily explained on mechanical principles.⁴ It may seem altogether superfluous to point out that the belief that with increasing knowledge physics may be completely reduced to mechanics, is a pious hope, that had better be explicitly stated rather than be covertly implied in the use of a term. Yet, failure to keep the distinction between the physical and mechanical clearly in mind has actually caused a great deal of confusion in the discussion of the issue between mechanism and vitalism.⁵

It seems also necessary to distinguish between mechanism and determinism. The changes of a physical system may be treated as a function of a number of variables, the mechanical conditions of the system as expressed in geometric coordinates being only one set of these variables.⁶ It follows, therefore, that a system may be determined in its mechanical features and physically undetermined, without any breaks or discontinuity in our laws of nature. Moreover, the events in a Kingdom of Heaven or the inner life of a Leibnitzian monadology might be absolutely determined and yet not be, except in an obviously metaphorical sense, mechanical.

A third obvious distinction, which has actually been ignored to the detriment of clear thinking, is that between mechanical phenomena and phenomena expressible in certain kinds of differential equations. It has been widely supposed that, whenever the laws of any branch of *Philosophy*, art. 1) are not justified in claiming the authority of Newton for this—witness the introductory paragraph of his *Principia*. Besides, it is well to remember that when there were no steam or electric engines “rational” mechanics could only deal with *vis viva* or masses in motion.

⁴ Boltzmann and Planck, the most distinguished physicists to defend the mechanical methods of the classical physics, have pointed this out clearly—see *Wiedemann's Annalen*, Vol. 57 (1896), pp. 64, 65, and Planck's *Acht Vorlesungen über theoret. Physik*, p. 64. Boltzmann says explicitly: “The possibility of a mechanical explanation of the whole of nature has not been demonstrated, yea it is hardly probable that we shall completely reach that goal.” (*Op. cit.*, p. 70.)

⁵ Even as careful a thinker as Professor Lovejoy (*Science*, April, 1911, p. 612) fails to note that mechanism and vitalism are not exclusive alternatives, and that a physico-chemical explanation of biologic facts is not necessarily a mechanical one. Loeb, the leader of those who call themselves mechanists, is as far as Driesch from believing that the phenomena of life can be explained by the motion of particles. In the light of recent progress in physical chemistry, also, it is hazardous to assert the existence of a greater gap or discontinuity between physics and chemistry than between mechanics and other branches of physics such as optics, theory of magnetism, or even the theory of elasticity.

⁶ J. J. Thomson, *The Application of Dynamics to Physics*.

physics, *e. g.*, those of electricity, can be expressed in the Lagrangian form, something has been achieved in the way of a mechanical explanation.⁷ It is interesting to note that Maxwell, whose procedure in his great treatise on *Electricity and Magnetism*⁸ is largely responsible for this impression, had previously been careful to point out that the mathematical form of the relation between different quantities might be the same though their physical natures were different.⁹ But mathematical analogies have always proved such a fruitful source of physical discoveries that physicists have been too prone to lose sight of the fact that mathematical analogy does not mean physical identity. This confusion has also been furthered by the ready way in which people confuse logical with historical priority. Thus, it has actually been argued¹⁰ that since Lagrange's equations were first derived from mechanical considerations, they are not likely to be general forms of natural law, and hence everything expressed by them must be ultimately mechanical. The date of derivation is, however, no part of the mathematical or physical meaning of these equations. Like other equations, they state the mutual implication of certain functions of variables, and the physical meaning of these equations depends upon the interpretation or meaning that we attach to the independent variables. Clearly, the general form (and even the method of derivation) of the Lagrangian equations does not demand that their variables should be masses and velocities rather than electric charges and their intensities. All sorts of different phenomena, social, economic, or physical, as well as electrical or thermal, may have their variations expressed by the same equations, precisely as they are subject to the same laws of the multiplication table.¹¹ The fact, therefore, that the laws of electricity can be made to assume the same form as the laws of mechanics no more proves the primacy of the mechanical than it proves the primacy of the electrical.

I

1. It is one of the unfortunate results of Ward's *Naturalism and Agnosticism* that it has strengthened the unhistorical notion that mechanism, *i. e.*, the mechanical interpretation of nature, is inconsistent with ontologic idealism. While it is true that mechanism has frequently been developed in the interests of physical monism or

⁷ Larmor, *Æther and Matter*, p. 83. Maxwell, *Electricity and Magnetism*, p. vii. Combebiac, *Les Actions à Distance*, appendix.

⁸ Part IV., Ch. 6-7.

⁹ *Scientific Papers*, II., p. 218.

¹⁰ Combebiac, *op. cit.*, p. 81.

¹¹ Petrovitch, *La Mécanique des Phénomènes fondée sur les Analogies*, esp. pp. 7-20. As an illustration from the realm of economics see the *Comptes Rendues de l'Académie des Sciences*, 1911, p. 1129.

materialism, it must not be forgotten that the mechanical view of nature was fashioned by the founders of modern idealism, Descartes, Spinoza, Leibnitz, and Kant; and to-day, it is idealists of such diverse schools as Wundt, and Fullerton, who contend that the mechanical point of view is necessary for physical science.

It is precisely this supposed necessity that is in need of critical examination. Why must all physical phenomena be viewed as ultimately so many different forms of motion? It is to be observed that the classic science of mechanics is a deductive system of propositions, all deducible from Newton's Three Laws of Motion or D'Alembert's Principle in its Lagrangian or Hamiltonian form.¹² But an examination of Newton's laws and D'Alembert's principle, or the principle of least action in its Hamiltonian form, does not reveal any of them to possess inherent logical necessity; nor has any valid *a priori* reason ever been adduced why all events in nature should be deducible from these laws. The attempts of philosophers like Descartes, Kant, or Wundt, or even of physicists like D'Alembert or Playfair, to prove these laws, hardly need any refutation.¹³ Careful examination of them readily shows that they either move in a circle, taking for granted the very principles which they pretend to prove, or else they appeal to principles which are no more self-evident (whatever that may mean) than those they wish to prove. But it is not necessary to examine these *a priori* proofs, since we are in possession of experimental facts tending to show that these principles are not at all universally true, but are only first approximations, *i. e.*, true only within certain limits. Thus, the Newtonian assumptions of the constancy of mass and the proportionality between force and acceleration are now regarded as true only of tangible masses at ordinary velocities (ranging up to the paltry 18 miles per second with which the earth moves in its orbit). When we come to the small particles which compose the cathode rays or the β rays of radium, moving with velocities comparable to that of light, recent experimental physics has been forced to assume that the masses no longer remain constant but vary with the velocity. Thus, even apart from the Einstein-Minkowski relativity theory—the only one that explains the Michaelson and Morley experiments—there is evidence for imposing a superior limit on possible velocities. Hence, the principle of the composition of velocities, or that acceleration varies directly as the force, is no longer of universal application. At any rate, there can

¹² In *Crelle's Journal*, Vol. IV. (1829), p. 233, Gauss has a demonstration that no other principle will ever be necessary.

¹³ Descartes, *Principia*, II., art. 23. Kant, *Met. Anfangsgründe*, Pt. III. Wundt, *Prinzipien der mechanischen Naturlehre*. D'Alembert, *Dynamique*, pp. 7, 64. Playfair, *Outlines of Nat. Philosophy*, p. 26.

be little doubt that the question, What fundamental principles of mechanics are actually true? can not be determined *a priori* but only by examining the experimental evidence—which involves elements of contingency.

Similar considerations apply to the attempts to prove *a priori* that all physical phenomena must ultimately be mechanical, *i. e.*, consist of the motions of material particles. As such arguments have only recently been repeated by Wundt and Meyerson, it may be well to examine them here.

The gist of Wundt's argument is that it contradicts our perception to assert that an object can change and still remain the same,—except in the case of spatial change.¹⁴ With all due respect, I must urge that this is sheer dogmatism. Our perceptions certainly do not contradict the assertion that an object can be now hot and subsequently cold, or that the same piece of soft iron can be at one time magnetic and subsequently not so—certainly there is no more contradiction here than in saying that the same object can be now in one place and now in another. The contradiction in saying that a house can remain the same though the color of its roof has been changed, is a contradiction which exists not in perception but only in a conceptual system which arbitrarily defines the identity of an object to consist in the maintenance unchanged of all its possible properties except its spatial coordinates. If an object can change its location and still retain its identity, why may it not similarly change its color, its thermal or electric properties? The assumption that the only possible changes of reality are spatial is simply the mechanical dogma over again in a different guise, and we have here no genuine proof but a *petitio principii*.

The same logical fallacy of supposing that facts of qualitative change are ruled out from reality because they contradict an arbitrary definition of identity, underlies the remarkably learned and charmingly written book of Meyerson, *Identité et Réalité*.¹⁵

Remembering, however, that good causes are frequently defended by bad arguments, we ought to be on our guard as to whether we can not find a better reason for the belief in the primacy of spatial change, a belief which has persisted since the foundation of modern physics. Such a reason, I believe, is to be found in the historic fact that only by reducing physical changes to phenomena of motion was it possible for the men of the Renaissance to overthrow the scholastic physics of illimitable occult qualities and to build up instead a quan-

¹⁴ *Prinzipien der mechanischen Naturlehre*, pp. 179 ff. In substance the same argument is repeated in all his other works. Cf. *Logik*, II., p. 225, ff.; *System*, p. 423.

¹⁵ Pp. 98–99. A similar argument was adduced by that lonely thinker, Spir, *Denken und Wirklichkeit*, p. 424.

titative physics capable of fruitful mathematical development. This was reinforced in the minds of men like Kepler and Galileo by the Neo-Platonic doctrine that the body of nature was composed in purely geometric terms. It is under the influence of the latter that Galileo brought forth, in his *Il Saggiatore*, the modern doctrine of the distinction between primary and secondary qualities. If only extension and motion are truly existent in nature, and colors, tastes, temperatures, *etc.*, are mere names or subjective products, then a true physics can be had only by reducing all phenomena to those of motion. The remarkable rapidity with which this doctrine was at once adopted from Galileo by men like Kepler, Descartes, and Hobbes, shows what a fundamental need of the time it met. Nevertheless, it is to be noted that the only fairly consistent attempt to banish all qualities from physics, *viz.*, the Cartesian attempted reduction of physics to geometry, broke down under the criticism of Gassendi, Newton, and Leibnitz. Atomists, Leibnitzians, and Newtonians, in turn, postulated besides space and matter, primitive qualities, forces, and the properties of repulsion and attraction, respectively. Moreover, as our instruments of measurements have increased, and as our mathematical methods have developed, changes in all sorts of qualities, such as illumination, elasticity, or electric charge, have become just as capable of mathematical development as changes of distance. Hence, the motive for reducing everything to spatial properties is no longer a living one. Doubtless scientific physics always endeavors for technical and esthetic reasons to reduce the number of fundamental qualities to a minimum consistent with the known diversity of facts. But this is distinct from the pretended *a priori* proof that all changes must ultimately turn out to be spatial. Against all the latter attempts it is significant to call attention to recent experimental work which tends to show that mass phenomena are of electric origin and that, therefore, electricity may turn out to be more fundamental than mechanics.¹⁶

2. There are, however, philosophers who distrust dialectic *a priori* arguments and even reject the distinction between primary and secondary qualities, who yet believe, as does Professor Fullerton,¹⁷ that all that takes place in the world must be explicable according to mechanical laws. Professor Fullerton frankly admits that the world is not known to be such a system, but the vision of it, he says, is re-

¹⁶ See the last chapter of Righi's *Modern Physical Theory*; J. J. Thomson, *The Electrical Nature of Matter*. For the earlier statement of the theory, see Larmor in the *Transactions of the Royal Society*, 186 (1895), p. 617 and *Wien, Archives Neerl.*, 1900, p. 96. Kaufmann's experiments are reported in the *Götting. Nachrichten*, 1901, p. 143.

¹⁷ *System of Metaphysics*, pp. 147, 226.

vealed to the eye of faith.¹⁸ This faith, I suppose, is based on a popular impression that the mechanical view has been making steady progress towards a complete explanation of the physical universe, and that it is, therefore, reasonable to hope that the hitherto unconquered fields will in the course of time yield to the sway of mechanical explanation. This is, however, a view which finds no support in any actual history of physics. Indeed, the most competent historian of physical science arrives at the very opposite conclusion.¹⁹ Even if we do not share Duhem's view as to the final bankruptcy of the mechanical view, there can be no doubt that to the conscientious reader of the history of physics there is no such continuous progress towards a mechanical millennium as is pictured in the popular myth. It is easy to show that throughout the history of physics there have never been wanting fruitful researches carried on in utter independence of the mechanical hypothesis: the foundation of thermo-dynamics by Fourier, of electro-dynamics by Ampère, and the phase rule by Gibbs, are striking and well-known instances. The history of mechanics also shows a perpetual see-saw between those who are partisans of the conflicting claims of motion, the atom, or force, as the primary and all-sufficient category. Thus, the purely kinematic view of mechanics, with its æther and vortices, which seemed to have died with Descartes, was revived by the vortex-ring hypothesis of Helmholtz and Kelvin, by Larmor and others in their attempts to derive matter from æther, and in a different guise by Hertz in his brilliant but un-influential *Mechanics*. The atomic hypothesis, brought into modern physics by Gassendi, Huygens, and Boyle, was eclipsed by the physics of forces of Newton and Leibnitz (united in Boscovich), and was revived again by Dalton and Avogadro in the early part of the nineteenth century. It suffered some eclipse in the latter part of the nineteenth century—witness Berthelot, St. Claire Deville, and Ostwald—and is now to the forefront again in the form of the electron theory.²⁰ Nor has the Newtonian dynamics had an unchecked

¹⁸ *Op. cit.*, p. 227.

¹⁹ Duhem, *L'Evolution de la Mécanique* (1905). See also his *La Théorie Physique* (1906); his *Essai sur la Notion de Théorie Physique* (1905); *Le Mixte* (1904); and *Introduction à la Mécanique Chimique* (1903).

²⁰ It is of course only analogically that the present electron theory may be called atomic. In one sense, however, it is an emphatic refutation of the old conception of the *atom* as absolutely *indivisible*. The basis of the present electron theory is not any *a priori* or philosophic necessity, but the empirical discovery that many physical facts involve multiples of a certain amount of electricity. As to what physical fact corresponds to this mathematical unit, it would be hazardous to assert with any assurance in the present state of our knowledge. I may, however, add that the phenomenalist view that the physical atom is a mere symbol or mental figment ignores the vast mass of empirical evidence which makes the existence of atoms (*i. e.*, *physical* indivisibles) as

career. Its great triumph in astronomy made its immediate ascendancy irresistible, and for over a century and a half all physical phenomena were viewed as those of miniature astronomical systems, governed by central forces. La Place's treatment of capillarity in his *Mécanique Céleste* is perhaps the most characteristic product of this attitude, in which the attractive and repulsive forces of non-extended points in empty space were regarded as the key to all the secrets of nature. Yet the opposition to the Newtonian concept of gravity as a property of matter—witness the works of Euler and Bernouilli—never completely died out. When La Place confidently announced the permanent completion of the Newtonian system by his explanation of the double refraction of light, a large part of that structure had already been undermined by the labor of Young, Fresnel, and Faraday, which brought back the æther and contact forces and banished action-at-a-distance. But the multiplicity and complexity of the various models of the æther—elastic, labile, solid, fluid, irrotational, gyrostatic, adynamic, *etc.*—soon made physicists weary and brought about a reaction, so that good physicists now prefer to go back to something like an emission theory of light rather than lose themselves in interminable seas of hypothetical mechanisms, besides which the Ptolemaic cycles and epicycles were simplicity itself.²¹

3. A third type of argument, the psychological, is represented by Abel Rey's recent book, *L'Énergetique et le Mécanisme*. The substance of M. Rey's contention is as follows: There can be no thought without images, and mechanics is best suited to provide images or models of physical phenomena. Energism or mathematical physics may formulate the knowledge we have, but it can not serve as an instrument of research. The laboratory physicist must work with the mechanical hypothesis in mind. This argument can be supported by many quotations from Lord Kelvin and other British physicists to the effect that to understand physical phenomena means to be able to form mechanical models of them. This, however, is not a statement of a universal law. It is true only of a certain type of mind, of probable as the existence of King David, Cræsus, or the man Shakespeare. It is only in imagination that we can go on dividing matter indefinitely without changing its specific qualities. This is the case because the imaginary process of division soon gets to a point where the imaginary division is only a duplication of the small magnitude supposed to be divided. In physics, however, we find a preponderance of evidence to indicate that matter is not indefinitely divisible but that there is a limit to this process below which the breaking up of matter, *e. g.*, water, or wood, results in radical changes in its specific properties.

²¹ Campbell, *Philosophical Magazine*, 19 (1910), p. 181. Trowbridge, *Am. Journal of Science*, 31 (1911), p. 51.

those who, when they calculate the forces between the heavenly bodies, "feel their own muscles straining with the effort." But as far back as 1870 Maxwell,²² the most illustrious representative of this type of mind in physics, had recognized the existence also of the abstract and mathematical type, and that "the tenuity and paleness of symbolic expression" had equal rights in science with "the robust and vivid coloring of physical illustration." There is not a single diagram in Lagrange's *Mécanique Analytique*, and a careful reading of it shows that Lagrange had few physical images before his mind as he wrote it. If there are minds that can dispense with diagrams in geometry and mechanics, why not minds that can dispense with mechanical models of physical phenomena? Mechanical models certainly have not as much relevance to physical inquiry as diagrams in geometry, since it can be shown, as Poincaré²³ has done, that whenever a mechanical model is invented to explain physical phenomena, an infinity of other models is possible.

Nor is it true, as a matter of fact, that the mathematical type of mind is impotent to produce great physical discoveries. From the discovery of the laws of planetary motion by Copernicus and Kepler, or of universal gravitation by Newton, to the discovery of the laws of thermal and electric conduction by Fourier and Ohm, or the pressure of light by Maxwell, a long list of most impressive physical discoveries by purely mathematical methods can be drawn. Physicists, like others, are not always the best judges of what is going on in their own minds when they are working, and many who speak a current language of mechanism really carry on their researches by mathematical methods. Did not Maxwell himself arrive at the electro-magnetic character of light by the purely mathematical analysis of the dimensions of the ratio between the electrostatic and electromagnetic unit?²⁴ The same is true of many of Lord Kelvin's discoveries in thermodynamics.

I pass over M. Rey's argument for mechanism based on the ground that knowledge must proceed from the simple to the complex. Surely the various strains and stresses in the æther or the lateral vibrations in polarized light, are not psychologically simpler than the phenomena of light which the mechanistic hypothesis attempts to explain.

II

All the arguments for the mechanical dogma thus turn out to be vain. But our analysis suggests that *a priori* arguments against

²² *Scientific Papers*, II., 220.

²³ *Electricité et Optique* (1890), preface.

²⁴ *Scientific Papers*, I., pp. 577 ff; II., pp. 137 ff; and *Electricity and Magnetism*, IV., Ch. XIX.

mechanism would similarly prove ineffective. The present actual decline of mechanical explanation in physics may render the full revival of such explanations unlikely but not impossible.

It is a curious and noteworthy fact—worthy of greater attention than it has yet received from those interested in the drama of human thought—that philosophic criticism of physical procedure has almost always gone entirely unheeded. Apparently valid arguments by men like Stallo and Ward to the effect that the mechanical hypothesis was inconsistent with itself and inconsistent with the facts, have failed to exert any noticeable influence on physics.²⁵ The fact seems to me to be that neither of these inconsistencies is of great moment to the physicist. A final and finished account of the physical universe must doubtless be free of contradiction, but the physicist bent on exploring the facts may well use two contradictory hypotheses—such as the continuous and the discrete nature of matter—for the purpose. To the physicist, it must be remembered, an hypothesis is not an impeccable account of what he already knows but an anticipation of experience to guide his search; and while there can be no search at all without some hypothesis to point to the object sought for, it is not at all necessary that the anticipation should be absolutely complete and accurate. A large element of vagueness and indetermination in our hypotheses is not at all incompatible with its suggestive quality. Indeed, it may even be helpful in this regard in keeping the mind open to a greater number of possibilities.

Nor is a contradiction between a theory and the facts necessarily a fatal objection. Physical theories are flexible. If the facts of

²⁵ Thus, Stallo, and Ward after him, have argued that, on the kinetic theory, atoms must rebound when they clash or else *vis viva* be lost and the laws of mechanics no longer prevail; but if they do rebound, elasticity becomes a fundamental property of matter and the atomic theory no longer offers any explanation of it. (Cf., Kroman, *Unsere Natur Erkenntniss*, p. 315.) Neither horn of this dilemma, however, can be considered fatal. If the atomic theory does not explain elasticity, there are many other facts like the diffusion of gases which it does explain. On the other hand, recent physics has taught us that it is not necessary that the laws applying to ponderable masses should apply in the same way to molecules or atoms. We must guard against the naïve assumption that the laws observed to hold within the limits of the pressures, temperatures, masses, etc., actually observed, must necessarily hold below or above these limits. Maxwell shocked his contemporaries, even the agnostic Huxley, by asserting that the law "two portions of matter can not occupy the same space" has no application to molecules (*Scientific Papers*, II., 33). Yet it is clear that the law in question is not *a priori* necessary but founded on the simple empirical observation that ordinary solid matter has the property of impenetrability. If we had been as familiar with the diffusion of gases, or even with the interpenetration of water and alcohol, the dogma of impenetrability would never have acquired its vogue.

radiation do not fit in with the law of the conservation of energy, an æther can be invented and endowed with just those properties which will make the law true. If, therefore, physicists of a certain type of mind find that illustrative models based on a mechanical hypothesis help them to visualize their problems, it is as vain to argue against them as to argue against their religion or political affiliations. The effective thing in the long run is always the elaboration of the possibilities of some alternative method of explaining all of the facts with less hypothetical elements.

Now, the fundamental postulate of mechanism, as we saw, is the assumption that there is an ultimate structure of things which it is the primary business of the physicist to discover, and even where it has not yet been discovered, he must still be sure that it consists in nothing but the hidden motions of particles. An alternative to this realistic monism of motion has, as a matter of fact, always existed in physics since the days of Ptolemy²⁶ and Archimedes. But it has only recently been able to obtain sufficient philosophic backing to make it self-conscious and respectable. Since the days of Kant and Comte, physicists need not be ashamed of admitting that their science is not a means of piercing the veil of phenomena and grasping the ultimate reality behind it, but only a method of extending and organizing our knowledge of these phenomena; and the recent revival of pluralism supports those who refuse to believe that all possible changes of the physical universe must be reducible to just one kind of change: namely, motion. It is interesting to note that Comte's views in this matter were determined by Fourier, whose preliminary chapter in his *Théorie Analytique de Chaleur* contains the essence of the matter. Expressions of it may be found in the writings of the founders of mechanics itself. Thus, Galileo states explicitly,²⁷ "It does not appear to me at present worth while to investigate the causes of natural motion, concerning which there are as many different opinions as there are different philosophers. Some refer them to an attraction towards the center, others assign them to repulsion between the small particles of a body, while still others would introduce a certain stress in the surrounding medium which closes in behind the falling body and drives it from one of its positions to another. But it is not worth while examining all these fantasies. All that is needful is to investigate the properties of accelerated motion and define it in such a way that the momentum of the body increases uniformly in simple proportionality to the time." The

²⁶ Duhem, *Essai sur la Notion de Théorie Physique* (1908). See also Delambre article on Kepler, in Michaud's *Biographie Universelle*.

²⁷ *Discorsi e dimonstrazione intorno a due nuove scienze. Opere* (1811), VIII., p. 256.

same attitude was expressed by Newton in his famous adage: "*Hypothesis non fingo*." By hypothesis, we must remember, Newton meant an explanation not directly derived from phenomena. Thus he says in the concluding *scholium* to the *Principia*: "Hypotheses, whether metaphysical or physical, whether of occult qualities or mechanical, have no place in experimental philosophy. In this philosophy particular propositions are inferred from the phenomena, and afterwards rendered general by induction. Thus it was that the impenetrability, the mobility, and the impulsive force of bodies, and the laws of motion and gravitation were discovered. And to us it is enough that gravity does really exist, and acts according to the laws which we have explained, and abundantly serves to account for all the motions of the celestial bodies and of the sea."

An even more explicit statement of this we have in Rankine's paper on the *Science of Energetics* (1855). Rankine clearly distinguishes two methods of constructing a physical theory, which he calls the hypothetical and the abstractive. The hypothetical method consists in starting with some hypothesis about something which is not the object of direct perception, and deducing from this supposed constitution the empirical properties. All mechanical theories of physics, *e. g.*, the kinetic theory of gases, illustrate this method. The abstractive method, on the other hand, is described as follows: "Instead of supposing the various classes of physical phenomena to be constituted in an occult way of modifications of motion and force, let us distinguish the common properties which these classes possess and define more extensive classes denoted by suitable terms. For axioms let us frame propositions containing as particular cases the laws of the particular classes of phenomena comprehended under the more extensive classes. So shall we arrive at a body of principles applicable to physical phenomena in general and which, being framed by induction from facts alone, will be free from the uncertainty which must always attach even to those mechanical hypotheses whose consequences are most fully confirmed by experiment."²⁸ It is to be observed that while mechanical theories of physics are illustrations of the hypothetical method, mechanics, as a branch of physics studying the laws of motion, is itself an illustration of the abstractive method.

Though Rankine was one of the founders of modern thermodynamics and the author of classical treatises on the steam engine and ship building, this paper received very little attention. It came in the heyday of mechanical models, when every one was trying to derive the principles of energy from the principles of mechanics. These efforts, however, soon came to a standstill. The kinetic theory

²⁸ Rankine, *Miscellaneous Papers*, p. 245.

of gases struck a rock in the problem of the equipartition of energy, being unable to harmonize the theory with the behavior even of diatomic gases.²⁹ More particularly it was soon realized that the principle of entropy or degradation of energy—the general fact that physical phenomena are in a given direction and irreversible—could not be explained on mechanical principles. (Thus, two gases will diffuse themselves one in the other, but will not conversely separate themselves spontaneously.) Maxwell, Boltzmann and Gibbs realized this, and introduced the notion of a statistical as opposed to a mechanical knowledge of physical phenomena. Imagine an almost infinite number of particles moving at random with various velocities, and one can compute on the basis of the various degrees of freedom and the principles of statistical probability what the total effect will be. The famous example of the sorting demon was introduced by Maxwell to show that the second law of thermodynamics was not mechanically necessary but had only statistical certainty. This has recently been reinforced by M. Gouy's investigations on the Brownian movements, which indicate that what we ordinarily call thermal equilibrium, *i. e.*, stable, uniform distribution of temperature, is only statistically so when we consider sensible volumes, but does not hold within microscopic volumes, so that the second law of thermodynamics is not applicable within them.

As the laws of thermodynamics are empirically verifiable and independent of all atomic or other hypotheses as to the ultimate structure of things, the enormous success which followed the introduction of this method into physical chemistry by Gibbs, Van der Waals and Van't Hoff, gave support to the empirical or descriptive theory of physical science upheld by Kirchhoff, Avenarius, Mach and Duhem.

Before examining the philosophic significance of this theory, it is well to note what it has actually meant for physics. No one can compare the prevailing tone of physical theory to-day with that of a generation ago without noticing the greater recognition to-day of the provisional, empirical, pluralistic, and yet thoroughly mathematical character of physics. No one asserts nowadays, as did Maxwell, that atoms never change and are to-day as fresh as when they came out of the hands of the Creator. Formerly we used to be told that when hydrogen and oxygen combine to form water, the two substances, as represented by the H and O atoms, remain the same, though most of the properties of the H₂O molecule in no wise follow from those of the H and O. Now reputable authorities on physical chemistry, like Ostwald and Duhem,³⁰ find it more serviceable to re-

²⁹ See the various papers of Rayleigh and the preface to Gibbs' *Statistical Mechanics*.

³⁰ Duhem, *Le Mixte*, p. 165. Ostwald, *Lehrbuch d. Allgem. Chemie*, II., pp. 5-9.

turn to the Aristotelian conception of change and to suppose that when an electric spark causes the H and O to combine, the H and O both disappear and a third something, namely, water, takes their place. Modern physics has learned to be suspicious of eternal substantial forms, and is not awed by the scholastic dogma *ex nihil nihil fit, nihil in nihilo*. We no longer think that because the white light that enters a prism issues in the form of many colors, it follows that the white light actually contained all the various colors³¹ and we are careful not to say that when a cool body is brought into the presence of a warmer body, the heat gained by one is precisely or identically that which is lost by the other. But perhaps the most striking illustration of the point I wish to make is to be found in the current statement of the law of gravity, which has so long served as the typical law of nature. Instead of asserting dogmatically that every particle of matter attracts every other particle precisely as the product of the masses and inversely as the square of the distance, careful physicists, like Poynting and Thomson, point out that astronomic observation is by no means decisive on this point and that all we can say is that when we take large masses like the planets, the mean results fit in with our formula.³²

From this point of view the classic notion of absolutely uniform causation, *i. e.*, laws of nature holding with absolute accuracy for the smallest atom as well as for the largest star cluster, can be replaced by the more modest doctrine of statistical averages. Our knowledge of physical phenomena is like that of social phenomena when studied through such facts as marriage rates, birth rates, tables of exports and imports, *etc.* The great difference between physical and social phenomena would thus be due to the fact that in the latter, individual variations obtrude themselves, while in the physical realm the constituent individuals or atoms are for the most part beyond our range of observation.

There are philosophers to whom the slightest suggestion of contingency in the physical world or any doubt as to whether everything does happen absolutely in accordance with universal laws, is an atrocious and unpardonable blasphemy. But whatever may be said for the sublime faith back of this attitude, it surely is not necessitated by the experience of the physicist who works with instruments of precise measurement. Laboratory workers know how difficult it is to get phenomena to repeat themselves even approximately, *i. e.*, within the range that we call the limit of probable error, and they will readily subscribe to the statement in Chwolson's

³¹ Wood's *Physical Optics*, Ch. XXI.

³² Poynting and Thomson, *Properties of Matter*, p. 46.

great international text-book, that when we study physical phenomena more closely we can convince ourselves that there is almost no physical law which can be exactly verified.³³

I do not want on this occasion to press the hypothesis of our great American thinker, C. S. Peirce, that there is a domain of radical indeterminism, that besides the variations due to errors of observation, there are variations due to the fact that our physical laws do not express with absolute accuracy the actual behavior of things. But modern physics is beginning to recognize more and more the point made by Poincaré^{33a} that the simplicity of Newtonian laws may be the result of averaging large numbers of very complicated phenomena, in accordance with the well-known fact that the larger the number of cases considered, the simpler the expression of the prevailing type. Spectrum analysis and other evidence as to the structure of matter suggest that an atom of sodium may have a structure as complicated as that of a piano or stove, and the variation in the behavior of the atom may consequently be as great as that of these somewhat capricious objects. But when we remember that the number of atoms in a pin-head is greater than that of all the human beings now alive, we can readily understand why any tangible piece of sodium behaves so like any other piece.

The principle of uniformity of nature is usually stated thus: like causes produce like results. But in physics, as in social science, we never have the entire identical situation repeating itself. What we observe is that when the antecedent situations are alike, the sequences are also alike. Now likeness is a matter of degree, *i. e.*, it depends on the fineness of our classification. When we say water freezes at 32° F. we regard all samples of water as alike, and the result is approximate enough when measured by an ordinary thermometer. We may, however, treat our water as consisting of different samples having, *e. g.*, different degrees of density, and notice slight variations in the reading—provided our thermometer is adequately graded. The causal relation is thus simply a statistical correlation between the heights of columns of mercury and the freezing points of the various samples of water.

III

The considerations involved in the last section are so well established in the daily procedure of scientific investigation, that any form of rationalism which puts its face against them is bound to come to

³³ *Traité de Physique*, I., p. 29. Cf. Poincaré, *Value of Science*, Pt. III., art. 4-5, and Thomson and Tait, *Natural Philosophy*, I., Ch. III.

^{33a} *Thermodynamique*, p. vii.

grief. The old rationalistic conception that the principles of mechanics are *a priori* self-evident axioms which will never be successfully attacked,³⁴ has been effectively disposed of by the rise of non-Newtonian mechanics. The primary laws of mechanics, as of any other branch of physics, are now seen to be logically contingent, *i. e.*, they are not to be derived from the non-temporal laws of logic.³⁵ Their contraries are possible hypotheses. There is nothing illogical or inconsistent in supposing the Newtonian laws of motion or the formula of gravitation to be grossly inaccurate. Not a single established fact of physics but its absolute accuracy has now been rudely shaken by recent experimental work in Brownian movements, radio activity, the phenomena of radiant energy, *etc.* But while all this fortifies the view that natural laws are contingent and only statistically true, it seems to me an unseemly intellectual haste to jump to the conclusion of the positivism or phenomenalism of Mach, Pearson and their followers, who assert that the world simply is, and that all necessary relations are fictions or mental products.

We may grant at the outset that the positivists are right in regarding the popular use of the *word* cause as embodying remnants of primitive animism. When we popularly speak of things causing something else, we undoubtedly tend to attribute to things something analogous to human compulsion, something of muscular tension or the feelings of activity and passivity when we wilfully push or are pulled contrary to our will. Such animism is out of place in modern scientific physics. The Humian analysis of causation and its replacing of the ideas of production, of power and force (as synonyms of compulsion) by the idea of regular sequence, was the *coup*

³⁴ This used to be the basis for preferring physical deductions from the laws of mechanics rather than from the laws of thermodynamics. (J. J. Thomson, *op. cit.*)

³⁵ Similar considerations hold true of the mixture of logic and psychology which passes as epistemology. To derive the fundamental laws of physics from the laws according to which the mind operates, does not really remove this contingency. There is no reason to suppose that the laws according to which the mind works are absolute constants, and the only evidence we have as to the way in which the mind operates at its best is the changing body of actual science. There is a close and suggestive parallel between the attitude of modern epistemology to physics and that of the older theology. The older theology tried to derive the truth of physics from the will of God. Neo-Kantian epistemology tries to derive it from the ways in which the mind operates. The physicist may believe as much as he pleases in "the ways of the mind" as he does in the "will" of God. But he must not introduce them as principles of physical explanation, for the simple reason that they are not principles of determination. We have no scientific way of telling the way the mind works or the will of God, except by examining the results.

de grâce which modern thought administered to the scholastic physics of occult qualities and powers. If we do sometimes find authoritative physicists still speaking of the operation of forces in an anthropomorphic way, or lapsing into the popular manner of speaking of heat or gravity as causes, we must remember the great difficulty of freeing ourselves completely from prevailing popular use of words, and the even greater difficulty of expressing ourselves vividly without the use of metaphors, of which anthropomorphism supplies the bulk. Technical and mathematical language, however, is surely, if slowly, replacing expressions of causal relations with mathematical functions or equations, which are neutral to all anthropomorphic hypotheses. In formulating Newtonian laws of motion in popular language, physicists may still use such phrases as: bodies acted on by forces, *etc.* But when the physicists' actual deduction from these laws is carefully examined, we find actions replaced by changes in certain physical coordinates or parameters, and that "force" denotes simply mA , the product of the number of units of mass by the acceleration or rate at which the velocity changes. Mathematical expressions like mA , which keep on recurring, are usefully denoted by some name; and the conferring of a name unfortunately always tends to reify or hypostatize that which is thus denoted. But the whole tendency of modern experimental as well as mathematical physics is to eliminate the metaphysical notion of matter as an ultimate substance, and to find the element of permanence—without which there would be no science—in the mathematical relations. Thus Helmholtz, who in his youth thought that "the final aim of physical science is to find the ultimate unchangeable causes of the processes in nature," became satisfied later that the principle of causality meant nothing more than that natural phenomena happen according to law.³⁶

We must then not only admit with Hume that conscious analysis does not show any single event to necessitate any other event, but modern physics suggests that the laws of nature which do correlate these events are themselves contingent, in the sense that they are known to be true only within the limits of observation, and may perhaps not prevail outside of the infinitesimal portion of the universe whose surface we have scratched. We can not be sure that these laws held true in the distant past any more than we can be certain that they now hold in the more distant parts of space not available to our instruments.³⁷

It is not a valid objection to this view that it does violence to the

³⁶ *Wissenschaftliche Abhandlungen* (1882), p. 68.

³⁷ For a vigorous refutation of the easy assumption that the known laws of physics must hold for the whole universe see Chwolson in *Scientia*, 1910.

universal practical certainty as to the existence of a permanent and uniform nature of things. Certainty is a psychologic affair, and people are notoriously most certain on complicated questions of politics and religion, on which they have the least knowledge. But it is a valid argument against empiricist interpretation of it that it fails to account for the fundamental assumption underlying all scientific procedure: namely, that the logically necessary relations which hold between mathematical expressions hold of natural phenomena themselves. No physicist for a moment doubts that all the unforeseen logical consequences of a true physical hypothesis must necessarily hold for the physical universe in which that hypothesis is true, and that, if any of these consequences turn out to be false, it must be due to the falsity of our original assumption and not to the fact that nature fails to behave in accordance with the rules of mathematical deduction or computation. So long, therefore, as the laws of logic and mathematics are applicable to the physical universe, necessity of a certain kind, namely, the necessity which connects ground and consequent, must be predicated of it. It would not be difficult to show that this is precisely the necessity which common sense and physical science actually attribute to the causal relation. A stone thrown up *must* fall down after its upward velocity is spent and it has thus become a free body, if we assume, as we do, the law of gravity. If carbon combines with oxygen and thus burns, any substance like paper, made of wood pulp, *must* burn. The consequences in both cases are necessary and physically explained, though the major premises are contingent. If the law of gravitation or that carbon combines with oxygen could themselves be deduced from another law—for example, some law of electro-magnetism—the realm of physical explanation would be widened and greater unity be introduced. But the logical character of physical explanation would remain unaltered. Actually, the search for physical causes or explanations is, thus, a hunt for appropriate major premises or middle terms. The principle of causality (as distinct from particular causal laws) is thus simply the general maxim that physical phenomena are connected according to invariant laws. While this maxim is properly a postulate or resolution of the scientific understanding to look for such connections, it can be maintained only because the world of physics is full of universal elements or relations which repeat themselves indefinitely.³⁸

The significance of this obvious truth, that logical or hypothetical necessity holds of nature, has been obscured by a number of

³⁸ Poincaré, "*Les équations expriment des rapports et si les équations restent vraies, c'est que ces rapports conservent leur réalité.*" *Congrès des Phys.*, 1900, *Comptes Rendus*, I., p. 15.

powerful dogmas in modern philosophy which are certainly not the outgrowth of reflection on the nature of modern physics. These dogmas are: (1) that logical and mathematical relations and abstractions generally exist in the mind only, while physical phenomena exist in the external world; (2) that strict or deductive reasoning is a series of tautologies which can not extend our knowledge; (3) that science deals only with the actual existing world, and (4) the monistic or organic view of truth which fails to note that approximation or partial truths are still truths.

One would have to be devoid of a sense of humor to attempt in the limited time available for this paper, a complete refutation of all these dogmas. But I may suggest as a possible philosophic venture to note how dubious or in need of radical revision these dogmas appear, when we deal seriously with the fact that after all nature does behave in conformity with logical and mathematical principles. Consider, for instance, the following statements of Mach: "No one will fancy that vibrations in themselves have anything to do with circular functions or the motions of falling bodies with squares." "These mental expedients have nothing to do with the phenomenon itself." Here clearly Mach, the monistic sensationalist or empiricist, is at one with the metaphysical dualism of Descartes and his dogma that universals and principles are in the mind only, while the physical world of extension lies outside of it.³⁹ But this fails to explain why phenomena seem to occur as if the law of gravitation with its inverse squares were true, or why the properties of circular functions have proved most potent instruments for the discovery of important facts in almost all branches of physics. Doubtless, equations are not vibrating strings; but is it not straining the dualistic dogma to assert that they have nothing to do with each other? Do not let us be misled by the term expedient or invention. A map or chart is an expedient or invention. Yet if it fairly represents its object, is it not because certain relations between its parts are precisely those between the corresponding parts of the object represented? Mach admits that it is easier to deal with natural phenomena when the relations between the quantities investigated be similar to certain relations between familiar mathematical functions. But what does that similarity here mean, if not identity of mathematical relations? No one denies the suggestive value of popular analogies, such as that which speaks of certain social phenomena as periodic, rhythmic, or typifying the swing of the pendulum. Such analogies are dangerous, because popular language does not indicate clearly where the differences begin and where identity of relations ceases.

³⁹ Mach, *Mechanics*, pp. 492-494. Descartes, *Principia*, I., Art. 23.

When, however, different processes are expressed in analogous equations, the extent of the identical elements is unmistakably indicated, and deductions made from these equations are applicable to all the possible regions in which exist relations such as expressed in the equations before us.

Grant that the law of identity is not a mere tautology or an assertion how we do, as a matter of fact, think, but a significant assertion that there are elements which remain identical; grant, for example, that the relation represented by the ratio 2:1 may hold between all sorts of different entities, and most of the artificial problems of the classical epistemology disappear. At any rate, it becomes rather easy to explain the seeming paradox that physical laws may be true and yet physical phenomena show departure from them. For physical entities may have invariant relations between their parts and yet, being complexes, not have their entire character expressed by such simple laws or mathematical formulas containing a small number of factors or operations. Consider, for instance, Newton's first law of motion: "A body not acted on by force would continue in a state of rest or uniform motion in a straight line forever." If we adopted the mode of argument prevailing among certain contemporary philosophers, we should say: This is a foolish statement. No one has ever seen a body not acted on by any force, much less verified its motion forever. Indeed, no such body does exist, if Newtonian laws of universal gravitation be true. Yet, though no single physical body acts as if the law of inertia were the only law, the law of inertia is still an indispensable part of the Newtonian mechanics—which, with all its limitations, is still one of the most accurate descriptions of nature that the human mind has produced. Again, consider Boyle's law that the volume of a gas varies inversely as the pressure. There is not a single gas that conforms to it exactly, but it is not, therefore, false. It is a true first approximation, rendered more adequate when we introduce additional factors, as was done by Gay-Lussac and later by Van der Waals. As our instruments of precision and control over nature increase, we attempt to eliminate more and more of the residual variations. This seems an endless task, but the physicist must always assume that phenomena depend not upon an infinite but upon a very limited number of factors.

Note that dependence upon a limited number of factors means independence of all others. The organic point of view, or Mill's notion that the total state of the universe at any one time is the cause of the total state of the universe at the next moment, ignores this element of independence which our physics is constantly asserting.

(For example, the friction in a gas is independent of its temperature, *etc.*) It seems to me also quite clear that a principle such as Mill states would be inconsistent with the principle of causality as actually employed and as explained by a physicist like Maxwell. As stated by the latter, it is the following: "The difference between one event and another does not depend on the mere difference of the times or places at which they occur but only on differences in the nature, configuration, and motion of the bodies concerned."⁴⁰ If we did not eliminate from our consideration the particular moments of time or points of space at which events occur, physics would remain impossible. To speak of an event at all, there must be kinds or classes of them. They must be capable of repetition. And these repeatable time intervals (seconds, years, *etc.*) and space intervals (yards, *etc.*) rather than instants and points enter into the causal relation of actual physics. But the principle of causality as thus formulated carries us further and determines our choice of space reference and time measurement, as well as the form of our mathematical equations. Suppose I measure the length of a certain rod and find that it varies irregularly. The maxim of causality means that such variation is not due merely to the difference in times and spaces at which the measurement was made, but to other factors, such as heat, pressure, *etc.* Similarly, if I notice that the tide rises higher on some days than on others, the principle of causality means that it is not the time at which it occurs but certain factors such as winds, nearness of moon, *etc.*, which must be taken into account. No single law of physics would have meaning if everything depended upon everything else. If the freezing of water depended upon an infinite number of factors, there would be no sense in saying it depends upon temperature and pressure or that one of the latter can be varied while the other is constant. We can speak of water at all only because certain qualities or groups of qualities maintain their identity and keep on repeating themselves while other things change. The particular gunpowder whose explosion fires a particular shell will never again do so, but the elements of mass, units of force, velocity, *etc.*, will repeat themselves indefinitely.

Without the assumption of the existence of identical elements, all common sense, as well as scientific assertion, becomes not only false but meaningless. On the other hand, unless physical nature behaves according to the laws of diversity (excluded middle and contradiction) not a single mathematical principle could be applied to it, and it might, as far as physics is concerned, be one big blooming confusion. In all physical operations where addition is applicable, we

⁴⁰ Maxwell, *Matter and Motion*, p. 31.

see operations which are essentially independent of each other. It is not necessary, for purposes of physics, to believe that nothing ever can happen except in accordance with the actually known laws of physics. It is not necessary to believe that the world exists solely for the satisfaction of our scientific ideals. But it is certainly most reasonable to suppose that the relations expressed by physical laws are actual constituents of the world, and that large domains of the latter are as described by our physical science.

To sum up: mechanism has failed as a final and complete account of physics. An adequate analysis of its progress bears out the contention that not $\epsilon\lambda\eta$, formless matter or blind sensation, but mathematical and logical relations form the intelligible substance of things. But that the world contains more than this intelligible substance, our emotions and actions amply testify.

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REVIEWS AND ABSTRACTS OF LITERATURE

Elements of Constructive Philosophy. J. S. MACKENZIE. New York: The Macmillan Company. 1917. Pp. 487.

Let it be recognized at the outset that the present reviewer will probably do his book less than justice; it moves in the atmosphere of tradition, but the author is at home there with comfort and urbanity. When an interior is so agreeably furnished with excellent copies of the genius of the Greeks, of the Middle Ages, of the Renaissance, and of early Victorian inspiration, one easily forgets to go to the window and see how very different it looks outside. If to study philosophy is to go into a retreat, where one may wonder, in seclusion from the world, why facts are as they are and not otherwise, Dr. Mackenzie's book is an excellent companion to philosophic solitude. You will learn of much that many people have said about a great many things. I am not sure that you will learn what they were talking about at the time, nor why they talked about it, nor whether if they lived to-day they would go on talking about it. Our author is the accomplished host who knows how to conduct the conversation of his guests, giving to each his perfect opportunity, and refraining with considerate gentleness from speaking the deciding word.

We are informed in the preface that the present work was undertaken more than a quarter of a century ago, and that the author has had it pretty constantly in mind ever since. That accounts perhaps

for the programme, which is outlined as follows: Book I., General Problems of Knowledge—From Doubt to Belief; Book II., Special Aspects of the Universe as Known—From Nature to Spirit; Book III., The Universe as a Whole—From Chaos to Cosmos. That would be enough to deter many a student for whom philosophy is still something to learn and not yet something to teach, something to keep us in honest contact with the world, and not a light to lead us kindly away from it. Yet here is a paragraph that reassures; and, like the perfect host, reassures both the guest for whom life is still a fine adventure, and the guest who has a treasure of memories.

"It will be observed that my treatment has been a good deal influenced by the writings of those who are commonly referred to as the New Realists. They have undoubtedly rendered a very valuable service in clearing away the last remains of the subjective bias by which modern philosophy, especially in our own country, has been so greatly perverted. It does not appear to me that their main contentions are in any way opposed to such an idealism as that of Plato; and I doubt whether they are really opposed to that of Hegel, at least as interpreted by Edward Caird and Dr. Bosanquet. I think it is true, however, that almost all idealists have tended to express their meaning in language that lends itself too readily to a subjective interpretation. It has been one of my chief aims to guard against this tendency in my own statements; but it is very possible that I may not have wholly succeeded" (pp. 1-2).

The final chapter is entitled General Results and these are indicated well enough by the section headings: *Summary of the Argument, Hypothetical Character of the Results, The Limits of Agnosticism, The Right to Hope, The Duty to Strive, The Religious Aspect of Philosophy*. On page 464 we read: "The attempt to enlarge our knowledge was found to mean the attempt to think of our universe as an intelligible whole, or as part of an intelligible whole; and the consideration of what is implied in the thought of an intelligible whole brought us to the conception of an absolutely perfect Being, *in seipso totus, teres atque rotundus*." And on page 468: "In forming the conception of a Cosmos, however, we are trying to anticipate the completed whole; and it may certainly be asked what right we have to do this, and even what right we have to believe that there is any complete whole for us to discover. Perhaps, in the strictest sense, we have not a right to believe this; but it would seem at least that we have a right to hope for it." But on page 479 comes a modern note: "It may be difficult to give any sharply defined form to the substance of hopes," and Dr. Mackenzie sees that the cosmos of perfect order is something we have no philosophical right to take for granted. "But some kinds of order, it would seem, have to be

created by conscious effort. To discover order and to create order are, I believe, the highest functions of humanity. We can gradually increase our knowledge and our insight, and we can gradually make life more sane and beautiful; and there is no real reason for supposing that there is any absolute limit to the progress that may thus be made. But the Cosmos, it would appear, is extremely complex. We can do little more than guess at its structure, and our guesses may be pretty wide of the mark. Nevertheless, it is worth while to try."

Philosophy, we are told, began in wonder; are we to believe that philosophers are people that wonder about the world as ladies in the moon might wonder at the ill manners of the Germans in Belgium?

I have, of course, done less than justice, very much less, to a book that is, after all, the expression of a distinguished mind. Dr. MacKenzie is extraordinarily open-minded, but one consideration seems to have escaped even his catholic sympathy. It is that the philosophy of an age expresses the civilization of that age, and if the philosophy is sincere and genuine it is a function of the preconceptions and aspirations of its day, a function of its ignorance as well as of its knowledge. So human an instrument as philosophy must be a function of human conditions and human imagination. Colonial and provincial as we in America still are, with more power than we know how to use, we are too little aware of what is fine and strong in the earlier chapters of our own tradition. But that is an emancipation, too, that makes it easier to see that faith in the eternal significance of philosophical problems belongs to the day of faith in the immutability of species. Museum specimens are usually interesting and frequently very beautiful. But we do not wish to wear the charming old clothes we see there, pathetically returning to their original dust; nor can we, if philosophy has brought us freedom, wish to think in terms of a tradition that is a function of what a philosopher, unnoticed by our author, has called "The Christian Epic," and which Messrs. Tylor, Fraser, Spencer and Gillen have helped us to understand. The issue has been admirably phrased by Leslie Stephen: "A doctrine is first received as an intuitive truth, standing beyond all need of demonstration; then it becomes the object of rigid demonstration; afterwards, the demonstration ceases to be conclusive, and is merely probable; and finally the effort is limited to demonstrating that there is no conclusive reason on the other side."¹ And now that I have begun to quote, I will quote again, this time from Dr. Gilbert Murray:² "A fundamental doctrine of Stoicism and most of the idealist creeds was the perfection

¹ *English Thought in the Eighteenth Century*, I., p. 80.

² *Four Stages of Greek Religion*, pp. 149-150.

and utter blessedness of the world, and the absolute fulfilment of the purpose of God. Now obviously this belief was not based on experience. The poor world, to do it justice amid all its misdoings, has never lent itself to any such barefaced deception as that. No doubt it shrieked against the doctrine then, as loud as it has always shrieked, so that even a Posidonian or a Neo-Platonist, his ears straining for the music of the spheres, was sometimes forced to listen. And what was his answer? It is repeated in all the literature of these sects. 'Our human experience is so small; the things of the earth may be bad and more than bad, but ah! if you only went beyond the Moon!' That is where the true Kosmos begins. And, of course, if we did ever go there, we all know they would say it began beyond the Sun."

In a very real sense Dr. Mackenzie's book is one to greet with enthusiasm; it is a symptom of what a contributor to this JOURNAL has called "The Passing of the Supernatural."³

The demand for a rational universe expresses, no doubt, often enough, a piety and loyalty of the soul. But what do we mean by a "rational universe"? A universe that expresses reason as a plan expresses its author? Is it reminiscent of the old conceptions of providence and design? Or does the term mean a world where experience can bear fruits, where intelligence can operate, where reason can be, with whatever difficulty, at home and seek to make its home more habitable? This is, as our author so happily says, to discover order and create it, and to do this is, he holds, the highest function of humanity. And if that is so, should not philosophy seek its vision in an order that man shall make for himself instead of in one that has been supernaturally created for him, and which needs the mystic's intuition and the idealist's dialectic to discover it. And what can dialectic ever discover except the formal implications of its presuppositions? The world ought to be rational, but this is a human duty and a human responsibility. It is in this sense that, with the Germans still in Belgium, a rational universe is the subject matter of philosophy.

WENDELL T. BUSH.

COLUMBIA UNIVERSITY.

The Mystery of Matter and Energy: Recent Progress as to the Structure of Matter. ALBERT C. CREHORE. New York: D. Van Nostrand Company. 1917. Pp. xii + 161.

The sub-title of this little book comes nearer indicating the character of its contents than does the main title, which latter carries with it some suggestion of theosophy rather than science. The book

³ A. H. Lloyd, Vol. VII., p. 533.

seems written to exploit the author's own line of investigation; but that line is well worthy to be called to the attention of all who are interested in the remarkable advances of present-day physical science, advances which even the great social upheaval we are now witnessing has not wholly sufficed to hinder or obscure. And who can say which may appear greater to those who look back a hundred years hence, a battle where ten thousand fall to gain possession of a few yards of shell-torn earth, or a new revelation as to what may be the reason for the law of gravitation or for the rigidity of bodies?

The author, with his eager enthusiasm for new suggestions, combined with a realistic faith in the objectivity of electrons and ether, is probably fairly typical of the working scientist. The philosopher might well question, however, the identification he makes of the physical hypothesis known as the "theory of relativity" with a philosophical subjectivism. The ambiguity involved in a careless use of the term "point of view," which may mean "a mind," or merely "a point of reference," seems to play a part in encouraging the confusion, a confusion not confined to the author. "Different times from different points of view" doubtless contradicts the notion of "one objective time"; but what it puts in its place might be "many objective times," and not "many subjective times."

Though the student of philosophy will not find in this book a complete review of progress in these fields, and must exercise caution in what he accepts, yet if he be possessed of that minimum of acquaintance with physical science in its present status which any philosopher ought to possess—although even that minimum is unfortunately rather rare among would-be philosophers—he will find here a fairly untechnical account of some remarkable scientific hypotheses and speculations, many of them still very tentative, but opening out alluring vistas of future possibilities, and serving, on the whole, to make the "mystery of matter" appear even more mysterious than before.

H. T. COSTELLO.

COLUMBIA UNIVERSITY.

The Psychology of Behavior. ELIZABETH SEVERN. New York: Dodd, Mead & Company. 1917. Pp. 349.

Dr. Severn's book is an attempt to present psychotherapy and "mental science" in a simple way, and to indicate their use in daily life. "The book," reads the publishers' announcement, "has a popular appeal, and is full of the helpful suggestions of an experienced 'physician to the soul.'" And then, with an American eye to the financial chance—"Of particular interest is the chapter on the Psy-

chology of Sex." The chapter headings are: "The Unconscious," "Intellect," "Imagination and Memory," "Will," "Emotion," "Sex," and "Self."

Dr. Severn bases her general doctrine on intuition as a function of the unconscious, goes on to a frank acceptance of telepathy, and lays it down as quite "certain that thought has the quality of vibration," and "is an etheric mode of motion" (pp. 15, 27). But the book contains less about telepathic vibrations and the "Supreme Universal Intelligence of which we are only small portions" (p. 14), than one would expect from these initial pages. The author shows a pardonable impatience with the barrenness (except for commercial uses) of an exclusively experimental method, and sheds a lady-like smile on the mouse that has slowly been delivered out of the mountain of psychological measurements; and she goes on, in charmingly unscientific fashion, dispensing a little Freud here and there on the way, to expose the art of remaking oneself by the intelligent scrutiny and resolute modification of the inherited, but quite plastic, bases of character. There is a good deal of tautological but delightful advice, such as the prescription of "an independent and self-confident attitude" as the best diet for the development of a "strong Will" (p. 163); and occasionally the argument rests (as on p. 342) on Lamarekian assumptions that are either naïve or remarkably courageous.

A certain charm of personality pervades the book; and the added quality of perfect clarity makes it very appropriate reading for those who desire to be initiated into the pleasant mysticism of mental science.

WILL DURANT.

NEW YORK CITY.

JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. November, 1917. *La philosophie française en Amérique* (pp. 393-428): WOODBRIDGE RILEY. — The article is an account of the influence of French philosophy in America, and especially of the influence of Eclecticism, which was especially acceptable because of "the characteristic tendency of America toward eclecticism." *La spontanéité organisatrice et la perception pure* (pp. 429-449): J. SÉGOND. — Every perception of things and of the soul is a dynamic work of the spirit, a material and formal construction of the concrete universe, a schematic invention, more or less complete and profound, of exterior reality and of the emotional life. *Revue critique*. Alessandro Bonucci, *Il Fine dello Stato*:

GASTON RICHARD. *Analyses et Comptes rendus*. Mariano Benlliure y Tuero, *El Ansia de Inmortalidad*: J. PÉRÈS. Carl C. Brigham, *Two Studies in Mental Tests*: DR. JEAN PHILLIPE. Dr. H. Bernheim, *Automatisme et Suggestion*: G. L. DUPRAT. A. Vinet, *Philosophie Morale et Sociale*: EDMOND RENOIR. *Nécrologie*.

Parsons, J. Herbert. *Mind and the Nation: A Précis of Applied Psychology*. London: John Bale, Sons & Danielsson, Ltd. 1918. Pp. 154. 7 sh. 6 d.

Spaulding, Edward Gleason. *The New Rationalism: the Development of a Constructive Realism upon the Basis of Modern Logic and Science, and through the Criticism of Opposed Philosophical Systems*. New York: Henry Holt & Company. 1918. Pp. xviii + 521. \$3.50.

NOTES AND NEWS

THE members of the Department of Philosophy of Columbia University have just issued a volume entitled "Studies in the History of Ideas," published by the Columbia University Press. It is their hope that the present volume may be followed by others, and that contributions to them be made by workers in other fields than what is academically known as philosophy. In so far as the present volume expresses a point of view, it signifies a recognition that the constructive philosophy of any period is part of that period's total intellectual experience.

PROFESSOR E. G. SPAULDING, of Princeton University, has been appointed First Lieutenant in the Corps of Engineers, U. S. R. After training at Camp Lee, Virginia, he will be attached to the Gas Defense Training Section of the Engineers Corp.

DR. EDWIN B. HOLT, assistant professor of psychology at Harvard University, has offered his resignation to take effect September 1, 1918.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

AGAIN, THE VALUE OBJECTIVE AND THE VALUE JUDGMENT: REPLY TO PROFESSOR PERRY AND DR. FISHER

PROFESSOR PERRY and Dr. Fisher have done me the honor of submitting some papers recently published by me in this Journal to a searching criticism which I am sure they needed. At least I have profited by the careful analysis they have given my ideas and I know no better way of acknowledging my indebtedness than by trying to adjust my thinking to the questions they have raised. I hope that the attempt may also be useful to others who are interested in the same problems.¹

Space will not permit me to take all their criticisms into account and consequently if I concentrate on one or two points which I consider especially important, I hope it will not be thought that I am trying to escape any of the responsibility which the deliberate launching of either new or questionable ideas imposes.

The chief point of attack in both papers is my theory of the value objective and the corresponding theory of the value judgment, although Fisher finds the former much more objectionable than does Perry. But while the object of attack is the same, both the point of view and the conclusions reached are in certain significant matters quite different. This fact must to a degree determine the method of reply.

I

It will be convenient to consider Dr. Fisher's paper first for, if I am not much mistaken, in fundamentals there is greater agreement with my point of view than in the case of Perry. For this reason I can not but regret that Dr. Fisher did not emphasize the

¹ The two papers are: "Dewey and Urban on Value Judgments," this JOURNAL, Vol. XIV., No. 7, and "Professor Urban's Value Theory," this JOURNAL, Vol. XIV., No. 21. The papers criticized in the foregoing are: "Value and Existence," this JOURNAL, Vol. XIII., No. 17, "Knowledge of Value and the Value Judgment," this JOURNAL, Vol. XIII., No. 25, and "Ontological Problems of Value," this JOURNAL, Vol. XIV., No. 12.

points of agreement more. He mentions one point at the beginning and adds that "this is about the only point I can agree with." In the body of the article, on the other hand, he notes position after position which he accepts. When, for instance, he agrees with me as to the fundamental distinction between value and being (p. 570); that value may attach to objects apart from human feeling about those objects (p. 576); that there is such a thing as value knowledge (p. 576); that reality is a form of value and that a value connotation is inseparable from the notion (p. 578); that value implies reality (p. 580); he really has accepted about all the things that I consider important. His disagreement is then rather with certain technicalities in terms of which I have developed these positions. Now, for my own part, I am much more interested in the points of agreement than in the points of difference, and I think Dr. Fisher is also. For this reason, and for the sake of the things in philosophy we both hold most important, I feel that he should have emphasized the agreements first.

I shall return to this point in the sequel. In the meantime the disagreements are real enough and call for consideration.

Dr. Fisher opposes my conception of the value objective and he considers that it has its origin in a lack of clear interpretation, on my part, of the object of the value judgment. "He (the present writer) treats it now as value, now as an object's value." In other words I have confused the value of the object with the object's being valuable. The first is not apprehended by judgment but by feeling, he holds. The latter is not a value judgment but a truth judgment.

Now the first point to emphasize is that Dr. Fisher recognizes as the object of judgment or belief the same thing that I have described as the objective of the value judgment. Only he insists that it is the object of a truth judgment. He insists that every judgment, as judgment, is a truth judgment and that "to distinguish between a truth judgment and a value judgment," as I have done, "is to admit that there is no such thing as a value judgment."

I must first of all admit a certain justification in this reply. It is possible that I am not wholly free from the charge of careless expression at this point. But if so, it is due, I think, to an almost inevitable equivocation in the truth concept. That every judgment lays claim to truth is beyond doubt—that is, if truth be defined broadly enough. If, however, truth judgments be defined as asserting something, either explicitly or hypothetically, about existence (as, for instance, we shall see later Perry defines them), then I hold there is knowledge which is judgmental, which does not assert the

existence of the object, either explicitly or hypothetically, namely certain judgments of intrinsic value, of the form "that *A* ought to be." If the context in which my distinction between truth and value judgments is made be taken into account, it will be seen that this is all I had in mind. I will leave this issue, therefore, for consideration in my reply to Perry's paper.

I do this all the more readily because Dr. Fisher agrees with me in my fundamental distinction between value and being. Consequently our real point of difference is as to how this other than being is apprehended. He and Perry agree that judgment apprehends only being. Perry says value is merely the name for a relation between existents. Therefore apprehension of value is really a disguised apprehension of a relation of existents. Fisher says value is something other than being, therefore it can not be apprehended by judgment at all. "It may seem a small thing," he says, "to say that what is apprehended by a value judgment is not value, but the value of a given object, but the point is, I think, of fundamental importance. Value is not capable of being apprehended by means of judgment; it is, I think, apprehended by some form of feeling."

The more fundamental question, as to whether there is any *a priori* reason why judgment should be confined to the apprehension of being, is involved of course in Fisher's criticism of my conception of the value objective. I shall come to that presently. Here I am concerned only with the view that value is apprehended by feeling.

It is good tactics to let one's opponents dispose of each other where possible. At this point I need only let Professor Perry speak. The entire confusion involved in the idea of a special knowledge of value is due, in his mind, to a confusion of the essential act of knowledge with the affective-motor attitudes associated with it. Powerless as this argument is against my conception, as I have shown it to be, it is serious for Fisher's position. As developed in Perry's dilemma,² "interest (feeling, desire) either constitutes values or it cognizes them." If the former, then knowledge of value is merely the description of interests in their relation to objects. In other words there is no knowledge of value as something different from existence or being. If, on the other hand, it cognizes them, then "values are not matters of interest at all, but qualities of objects for which feeling merely furnishes the requisite sensibility." Value becomes then merely an indefinable quality of objects. If Dr. Fisher accepts the latter alternative—and for him there is, I think, no middle ground

² R. B. Perry, "The Definition of Value," this JOURNAL, Vol. XI., p. 152.

—then two kinds of difficulties follow. In the first place, there are the logical difficulties involved in the conception of value as a quality, which I presented at considerable length, but to which he makes no reference. In the second place—and this is perhaps more serious—if values are qualities of objects, they fall under the category of being, and Dr. Fisher explicitly says that the distinction between value and being is fundamental.

I think then it would be perfectly just to say that Dr. Fisher is calling cognitive what is not cognitive, but is merely an expression of feeling. On the other hand, I am unable to see the point of the distinction that he considers so important—between value and the value of a given object. There is, from my point of view to be sure, *a priori* knowledge of value which is not knowledge of the value of specific objects, but aside from that, all knowledge of value is acknowledgment that some object ought to be, or ought to be rather than another.

Dr. Fisher himself sees, as I have suggested, that the idea of a specific value judgment is bound up with the theory of the value "objective." It is therefore upon the latter that he concentrates his chief criticism. It amounts to this. Value is not an objective. Moreover, if in using the term objective in my papers I mean it in the sense of Meinong, I involve myself in a contradiction. If, however, I do not adhere strictly to his view, I have needlessly confused the situation by lugging it in.

Let me take up the latter point first. It will pave the way, I think, for the more important question of whether value may rightly be called an objective.

In my original statement I made it entirely clear that the term itself is a matter of no special importance. But if the term introduced by Meinong can be extended to cover some new fact not contemplated by him, I do not see why I should be enjoined from using it. Dr. Fisher says that the term as used by him always applies to some form of being. I am at a loss to understand how he can say that, for it is precisely one of Meinong's most individual and striking positions that, besides the *Seins-objectiv* there is the objective he describes as *ausser-Sein*. Impossible objects have neither existence nor subsistence but have a form of objectivity apprehended by assumption. But this is a minor matter and simply indicates that Meinong himself uses the term in a broader sense than Fisher recognizes.³

³ Perhaps it may not be amiss to say here that I have discussed this very question with Meinong in conversations. I must confess that he was not enthusiastic over my conception of value as an "objectiv" but it was because of his conception of value as presupposing existence, not because of any *a priori* objections.

The real point of my position, however, is, as Fisher rightly says, that value is not a what at all, neither a quality nor a relation; it is a "that." In criticizing this position he attempts to challenge neither my positive argument, the parallel drawn between the existential and the value objective, nor my negative argument against the conception of value as a quality or a relation. He rests his whole contention upon what he admits to be a formal point. This point is as follows:

My thesis, he says, can be stated in the following form. "The value which is possessed by any object is the objective that the object ought to be on its own account." "The untenability of this thesis, may be seen," he thinks, "by means of a consideration which has to do with the relation of possession." A value may be possessed by an object, but an objective can not be. The value which is possessed by an object *A* is something that the object possesses, but the objective "that a thing ought to be on its own account is not a thing that *A* possesses. This lies in the nature of an objective as such quite apart from this particular objective" (p. 572).

I can not see (and I think any careful reader of my paper will agree with me) how Fisher can make this criticism without first meeting my "negative argument." For his entire criticism is based upon an assumption that it was one of the chief purposes of this argument to refute, namely that value is a quality or a possession of an object. *A* possesses qualities on account of which it is valued, or on account of which it ought to be, but it no more possesses its own oughtness than it possesses its own existence. In fact, one of my main points was that to make value equivalent to ought-to-be, and then to consider it a quality or possession of an object, is to involve oneself in a whole nest of contradictions, as indeed Croce saw. In other words, I recognize with Fisher that an objective is not possessed by its object, but it is precisely because value is also not possessed by its object that I was led to call it an objective. If not the whole reason, it is one of the main reasons for my theory.

Unless then, Fisher has something more than this formal argument, and until he has taken into account my negative arguments against value as a quality or a relation, I am, I think, exempt from further consideration of this, his main point. As a matter of fact, just this negative conclusion is my chief concern. If Dr. Fisher will accept what Professor Creighton accepts as the main conclusion of my study, namely, that reality is a universal aspect or form of experience, not definable in terms of anything else, my main object will be achieved. In using the term objective I was merely trying to find a conception that would cover this fact. The term itself is secondary.

That which lies back of Dr. Fisher's entire objection to my view is, of course, my equating value with the proposition that an object ought to be. He finds it fundamentally meaningless, he says. He denies that objects ever do or can "possess" the "obligation" to be. Does or does not Dr. Fisher realize that in passing from oughtness to obligation he has really changed the whole issue? I wonder. I agree with him—as I did with Kant—that things have no ear for an imperative, that duty or obligation refers only to persons. But are we talking about obligation or duty? Certainly I am not, whatever Dr. Fisher may be doing. I can not here repeat my reasons for thinking that the imperative is but a special case of the more general category, "ought to be" (p. 462). Nor have I space to rehearse how, after showing that intrinsic value is ultimately indefinable in terms either of quality or relation, it can be finally stated only as equivalent to "ought to be." My critic does not even refer to these arguments, much less meet them. Is it not sufficient to recall again that we often say that things ought to have been otherwise when we have not the slightest intention of ascribing obligation to them, and that the judgment that I ought to do certain things has itself meaning ultimately, only on the assumption that these things ought to be rather than others? In other words, "ought to be" is a category at least as ultimate as that of being, and I think that is always what we mean—if we know what we mean, when we say that an object has value in itself.

With this I gladly turn for a moment in conclusion to at least one of the many points on which we are in agreement, namely our common belief as to the nature of the relation of value to reality. I again assert that our agreement here is more important than our differences, for it separates us both from those views which, as for instance Professor Perry's, hold value to be a subjective addendum to reality.

As I see it, we both agree that reality is essentially a value-concept, that reality therefore implies value in some sense and also that value implies reality in some sense. In each case it is the sense in which this is to be understood about which we differ.

What then is our chief point of difference and its source? To those who maintain the point of view that Dr. Fisher and I agree in holding, the critics invariably answer that reality need not satisfy us in order to be reality—that this is a sentimental fallacy. Now my contention is that the two-sided postulate just stated is not to be identified with the postulate that reality must satisfy us. Fisher wonders how I can hold this view, (p. 579) that reality is a value concept, and reject the view that "the universe will satisfy us." In holding the first he accepts the second.

First of all I must ask Dr. Fisher how he knows that I reject it. Nowhere have I said so. As a matter of fact, I personally believe it. But belief is one thing and insight is another. If he will read my last paper carefully, he will find, I think, that the only point I was interested in maintaining is that this second position is not logically bound up with the first. Nowhere have I described this second view as "plainly untenable language," as my critic says (p. 579). The terms, romantic and sentimental, are in quotation marks, as representing the critics' position. All I was insisting upon is that the insight that value and reality are inseparable, and the concept of degrees of reality, do not rest upon the belief that reality will satisfy us, but upon something quite different, namely upon certain *a priori* characteristics of value which are matters of insight.

I am quite aware that if I were actually arguing against this belief, I have, as Fisher says, "done rather less than justice to it." But I have no intention of arguing against it. But now I should like to ask Dr. Fisher a question. It is easy to see why the proposition that reality implies value is the same for him as that it will satisfy us. He can consistently hold nothing else. If value is apprehended solely by feeling and feeling is a sign of satisfaction, then, if reality is value it is so because it satisfies us. But how then does he reconcile this with his view (p. 576) that value may attach to objects apart from any human feeling about these objects? I will say nothing about the difficulty of using the expression, "satisfy us," without its inevitably meaning satisfy *me*, nothing about the difficulties in such expressions as over-individual will or longing to which we seem otherwise inevitably driven. I will only again insist that the two propositions are not the same and that the first can be held independently of the second.

My critic says, "there is indeed no doubt that bare existence, whether physical or mental, does not imply satisfactoriness, but that is hardly the point." Yet it is precisely the point that we need to keep in mind—that things need not be good or beautiful in order to exist. Reality is indeed more than bare existence or subsistence (and if we are to interpret reality we must not be bound down to these categories), but if reality includes them, as it does, though it can not be reduced to them, and if reality is a value concept, then these are values also, and we must conclude that value does not necessarily include satisfactoriness. It is then very much to the point to say that the acknowledgment of these values does not imply satisfactoriness.

My thought is consistent at this point, Dr. Fisher thinks, "only so long as I hold that reality, though a value, is only one of several

species of value and does not imply any other species but itself" (p. 579). I do not claim consistency at every point and, as a matter of fact, this is precisely one of the points to which I referred when I said that the difficulties in the conception must be evident to the competent reader (p. 325). My object was not to solve all the ontological problems of value, but merely to establish the principle of the inseparability of value and reality without admitting that it rests upon the postulate discussed. Yet, without going into the question, I may ask whether my view would not be consistent on another assumption—namely that reality, instead of being the name for only one species of value, is the necessary presupposition of all values, while existence and subsistence are the conditions merely of some kinds of values?

II

Professor Perry's paper, as I have said, presents an entirely different situation. While Dr. Fisher and I would find much in common in our views of the place of the value concept in philosophy, Perry and I are far apart. It is true that Perry and Fisher agree in their attack upon my conception of the value objective and the value judgment, but the point of view from which the attack is made is quite different in the two cases. For one thing, value is for Perry merely a subjective *addendum* to reality, not essential to the reality concept itself. Again for Perry there is really no such thing, as for Fisher and myself, as a knowledge or apprehension of value. There is only knowledge about things and their relations, value happening to be the name we give to a certain type of relations.

Since the fundamental philosophical issue is so important, I can not but deprecate Perry's way of approaching it. Convinced as I am of what I have called the incoherence of pragmatism on the fundamental issues of value theory, it is all the more unfortunate that I should have been linked with Professor Dewey. Surely a passing remark (in a footnote!) in which one philosopher expresses the wistful hope that there may be at least one point of agreement with another, is hardly sufficient basis for the supposition that the two views, even though both are "dark and dubious," are identical. On the important points which differentiate my view from Professor Dewey's certainly my paper left no doubt.

Again I feel bound to express my regret at the tactics Professor Perry has chosen. In an earlier paper he called upon me specifically to meet a certain dilemma which was supposed to show the impossibility of the value judgment. I tried to meet the dilemma—with some success, as I thought—and presented him with one in return. I can not help feeling that if Professor Perry had taken up the dis-

cussion at this point, we should now be nearer an understanding. As it is, I am forced to follow his tactical lead.

Professor Perry is right, I think, in saying that "those who maintain the value-judgment theory do so generally because they believe that the conception of ought is peculiar to value judgments and is irreducible to the category of being and non-being." At least he is right in attributing that belief to me. Though not the only reason, it is an important one for the position I maintain. He is also right in quoting me as saying the value judgment is not, "*A* is as it ought to be," but rather "that *A* ought to be."

Now with Dr. Fisher, he maintains that this is not a value judgment but a truth judgment. "Even in a judgment of this form," he says, "one is nevertheless judging either truly or falsely concerning a logical or implicational fact. Such a judgment *differs in no respect* from any judgment asserting anything only hypothetically or contingently existential" (*italics mine*).

The first part of this statement is undoubtedly true, as I recognized in meeting the same point made by Fisher. In the sense that anything, in any universe of discourse, is a fact, value is a fact. In the sense that everything *is*, the objective "that *A* ought to be" is, and my judgment, "that it is," is either true or false. But if I understand him, that is not Perry's point. It is his second statement, that the "value judgment" differs in no respect from any judgment asserting existence hypothetically, that contains the point of his argument and the one with which I take issue.

But how can Professor Perry make such a statement, at least in criticism of my papers, until he has discredited the analyses and arguments by which, over and over again, I proved that there are judgments of the type "that *A* ought to be," in which existence (or being in any of its definable senses) is not asserted either categorically or hypothetically? As a matter of fact, he neither examines any of my illustrations nor attempts to meet my arguments. But it is precisely on these that my whole position rests—not only my theory of a unique value objective, but my further position that while value does not necessarily presuppose existence, it does presuppose "reality."

On the other hand, it is with little less than wonder that one finds him making use of the following illustration of his own, although it is easy to see why he should do so. "The comet ought to be visible at such and such a time and in such and such a place." Surely, says Perry, "ought to be" here means simply hypothetical existence. Most of us would, I think, find the illustration wholly irrelevant, for the simple reason that ought, as here used, has nothing to do with value. It is simply an expression for degrees of prob-

ability. Yet it is of value that we are here speaking, is it not? But assuming that it is the same "ought" that we find in the value judgment, let me at least suggest where the argument would lead him. Would it not be straight to that position of Sheldon which he has opposed so vigorously, namely the definition of value as fulfillment of any tendency in nature whatsoever, and which, as Professor Bush in a recent paper⁴ has said, is indistinguishable from causality?

In trying to reduce the irreducible "ought to be" to such existential relations, Professor Perry argues as follows: "Some purpose requires or implies x ." This can equally well be expressed as " x ought to occur" or as "if A occur and is a value of x , then it is such as ought to occur." Now this is true, of course, in so far as what are called instrumental values are concerned. Assume purpose, and the contingent existence of the means is undoubtedly implied if the means are to have value. But how about the value of the purpose? Somewhere the intrinsic value must be found. In other words, Professor Perry ignores my entire argument on pp. 452-455, showing the circularity of all relational definitions of value, whether of his or Sheldon's kind.

On this point again, Dr. Bush's paper might be convincing to Professor Perry if mine is not. Indeed, in this paper Dr. Bush says that I could have made this point more forcefully against Dr. Schneider's reduction of all values to instrumental values. If I did not emphasize it in that connection, it certainly was not because I had not made it often enough before in my other papers.

Careful consideration of the second point in Professor Perry's criticism but confirms me in my original position. Exception is taken to the inference I drew from "certain *a priori* propositions about value which are independent of the particular psychological facts about interests and which are coordinate with the *a priori* propositions about being." Now I do indeed think that there are such propositions (such as that all objects must have positive or negative value, and that of any two values one must be higher than another). I also think that they are different *toto genere* from similar propositions about being, and that oughtness springs from these rather than from any hypothetical relation to existence. This constituted one of my lines of argument for a unique value objective and a corresponding value judgment.

Professor Perry expresses in passing a doubt as to the truth of these supposed *a priori* propositions, but in so uncertain a tone that it need not be considered. In this he is like Dr. Fisher. In any case that is not his main point. He challenges rather the inferences drawn from them. Granted their truth, he contends that "these

⁴ "Value and Causality," this JOURNAL, Vol. XV., No. 4.

generalizations about value are facts about value which are either of the general sort common to all facts, or of a particular sort derived from the special peculiarities of the psycho-physical fact known as interest." "Are not these propositions themselves truths or facts?" he asks. Certainly, I answer, as I took pains to affirm in my paper. But they are facts, about *value* (as he himself says) and not about *being*. It is precisely the thoroughgoing differences between *a priori* propositions about value and similar propositions about being that constitute one of my chief reasons for distinguishing value from being, in which distinction, remember, Dr. Fisher agrees with me.

These propositions are then truths or facts. Certainly. But I deny without hesitation that they are "of the particular sort derived from the special peculiarities of that psycho-physical fact known as interest," the reasons for which denial I have given in great detail and can not repeat here. As for the other alternative, that "they are of the general sort common to all facts," the phrase is too general and too vague for me to commit myself. If it includes in it the begging of the very question at issue, by assuming, namely, that all facts are facts about existence, I certainly do not admit it. The objections to subsuming value under existence are too overwhelming, as I have shown.

"My essentially sane habits of mind prompt me," my critic says, "to identify value with the fact that a thing ought to be. A judgment of value would then be a judgment regarding such a fact." I am indeed sane enough—fortunately—to see this. But it is just because I see it, and at the same time see that that fact is forever different from the fact that a thing is, that I felt also prompted to find a special name for it, namely the value objective.

Professor Perry has something to say about my theory of value as an objective, although only in a footnote. Unlike Fisher, he finds "nothing seriously objectionable in the contention that value is an objective and not a quality or object," but he does think it "undesirable to leave objectives as entitative finalities," and he does object to "the supposition that this in the least argues for the uniqueness of value judgments." I welcome this concession, for I think it is an important one. But why he should not object, unless he is more or less convinced by the argument, I can not see. I should have thought he would have objected—and strenuously too; for it is one of the essentials of the theory of objectives that they are apprehended only by judgment or assumption. If value is a unique objective, different from *Seins* and *Soseins objectiv*, then a value judgment to apprehend it is a logical consequence. But Professor Perry objects to leaving objectives as entitative finalities. Yet, if they are not finalities of analysis, what in Heaven's name are they? Why use the

term and the conception at all? Is it not just because value is an ultimate and indefinable—like existence, that I ventured to use the term. If value is but a subjective addendum to reality, a relation between an object and a finite subject's interest, as Perry holds, then certainly we don't want to call it an objective.

As in his former paper, Professor Perry regrets "this whole muddle over the value judgment." I share this regret with him. I wish I could believe, as he still does, "that the cause of it is a confusion of the essential act of judgment with the motor-affective attitudes with which it is associated." If this were true, an understanding between us ought not to be difficult. But unfortunately the difficulty goes much deeper.

It is true that at the beginning of the value-judgment discussion just such confusion was rampant. It is true also, I think, that this confusion is part, though not the whole of the source of Pragmatism's incoherence when it talks of the value judgment. But the confusion has long since been left behind, at least in those regions where the concept of the value judgment has been most thoroughly worked out. For my part, I still believe that the trouble arises from what I described as Professor Perry's misapprehension of the locus of the value judgment.

Here I think the dilemma which I presented to him, and which he did not answer, still holds good. I think it may best be shown, in this connection, by asking the question: is there any knowledge, any cognition, any acknowledgment of value at all? Dr. Fisher, we have seen, believes that there is, but denies that it is judgmental, holding that feeling has an apprehensional and cognitive character. With regard to Fisher's position I have already spoken. Let us now face Perry's more definitely. With his premises, he must logically deny that there is any knowledge of value. For he denies Fisher's position also. As I understand him, interest makes or constitutes values, but interest does not know them. On the other hand, there is no judgmental apprehension of value, for judgment merely apprehends the facts about our interests and the relations of objects to our interests. But surely this knowledge about interests is no more knowledge *of* value than knowledge *about* the conditions of light is acquaintance with light. There is then for Perry no knowledge of value.

I rather think that this is a dilemma that can not safely be ignored. A great deal hangs upon the way he answers it. For if he admits this conclusion, then, while there is of course a certain field of the study of human interests in which we may work with him and in which he has already had, and will doubtless have more interesting things to say, it is still not that field of objective values

which for some of us is becoming more and more the central problem of philosophy. We are talking about different things. On the other hand, if he admits knowledge of value, such knowledge, by the very nature of the case, implies acknowledgment, and one can scarcely acknowledge anything that one has not first apprehended in an act of knowledge. Thinking out what this act of knowledge and acknowledgment implies, I do not see how one can escape ultimately coming upon ideas of a value judgment and of a value objective which it apprehends.

I do not flatter myself that I shall have convinced Professor Perry in thus returning to the debate. But perhaps I may have succeeded in making my own position clearer, and that is something gained.

The importance of the question we are discussing, he knows as well as I, does not lie in the merely technical points that seem to engross us, but rather in the two opposing world views of which these points are, so to speak, the sharp logical wedges. That contrast Professor Creighton has well stated in a recent discussion,⁵ in which he expresses himself as agreeing with my general view of the relation of value to reality and contrasts it with the view, such as Perry's, that value is merely a part of reality or a subjective addendum. I can only regret, therefore, that Perry's criticism of my views came before the appearance of the third paper of my series, entitled "Ontological Problems of Value," in which the more ultimate consequences of my position are indicated. Had it been possible for him to take that into account, I am sure that I should have profited more than I have—which is saying much—from his penetrating criticisms.

In conclusion I should like to repeat, what I have said earlier, that from this more general view of the whole problem, Dr. Fisher and I seem to have much in common in our theory of value, while Professor Perry and I are still, alas, very far apart.

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HOW THE CONCEPT OF THE UNCONSCIOUS IS SERVICEABLE

THE espousal of the concept of the unconscious involves the necessity of a clear statement concerning it. Without this the psychology which makes use of it is discredited and its practical bearing upon human problems misunderstood and discounted. Moreover, the contribution which it has to offer toward true psychological advance is

⁵ "Beyond Realism and Idealism Versus Two Kinds of Idealism," *Philosophical Review*, Jan., 1918.

set aside unless this concept can be grasped in its scientific reality as a pragmatic tool, by which facts are reached and problems are brought to solution. It is therefore a just demand that there shall be made a scientific explanation of its psychological right to remain as a fundamental premise not alone in the practical, empirical work of psychotherapeutics, but in the extension of its use to the various cultural sciences.

The discussion of the "unconscious," that is of the use of the term and the concept behind it, must necessarily be approached somewhat negatively at first. This is due to the obscurity in which the concept seems to lie to minds long accustomed to the ordinary way of thinking, and to the apparent difficulty in amalgamating a broader and deeper content to current psychological thought and investigation. No classical psychologist needs to be reminded of the difficulty and illusiveness which confront the attempt to elucidate the subject matter of psychology. And even more in the ordinary world outside the psychological laboratory is there an appreciation, though undefined, of the endless complexity and the profundity of psychical life. Yet the simplest way for practical purposes has been for man to ignore the third dimension of the psychic life and confine attention to the superficial reach of conscious thought. Its length and breadth have caught some of the material streaming into it from the past, but at once, in the service of the interest in hand, this has either been reduced to the present plane, or again relegated to at least partial and temporary oblivion.

Psychology has also followed this mode of study. It has attempted to reduce mental activity to simple terms and simple well-defined acts, in its tests and observations, such as the ability to remember and repeat a certain set of numbers. No such simple, separated acts exist in fact. Even in the most thorough concentration of attention upon the task in hand the human being is swayed to an immeasurable extent, perhaps only most subtly, by various external impressions or more still by images and affects at work within. If these things thrust themselves into the limited and easy task of attending for a brief space to a laboratory test—and they have been found to do so—to how much greater an extent do they form a part which can not be neglected, of the more diversified and more significant mental activity of man's daily life? For this is the life out of which arise individual and social problems and from which all progress and effectiveness must grow.

The states of consciousness, its rapidly shifting processes and content, offer matter enough for thought and investigation; but how can they remain other than barren for knowledge and control unless

something more is taken into account? Psychology, to be deserving of its name, must stop at nothing less than the whole of the psychical life. Is this manifest in the limited period which may be ascribed to the clearest and most efficient consciousness or does each individual life at every stage of consciousness partake of something further and depend upon something more remote? Psychology as a practical science must to-day take heed to such words as these: "It is obvious we should begin, not end, by studying living human beings, by training ourselves to become capable of observing their behavior, by recording the manner in which they respond to changes in environment, by discovering the laws regulating feeling, thinking and acting, and then try to ascertain to what extent failure and success in living are the results of ancestral and inherited qualities. When this information has been gathered or collected, we may apply the principles to the practical regulation of conduct. To adopt any other method of procedure has already proved to be detrimental rather than progressive. It requires both courage and intelligence to face the fact that comparatively little is known of the laws governing human behavior, but when once the admission is made, then it is our first duty to accept the privilege of working hard to add as rapidly as possible to the present stock of information. We have tried to navigate the sea of life without chart and without compass . . . man as he actually is, has only recently become the subject for study."¹

The need for something more than consciousness and its activity in the study of man's psychical life, or in other words, in the science of psychology, justifies the adoption of some working concept and in part explains just such a one as has been adopted. The pressure of such need is already acknowledged to some extent, even in presence of the long-established blindness to psychical values, which lie outside the realm of consciousness. Here and there the term is somewhat tentatively admitted. Others, bolder and more aggressive in handling new tools, adopt it, but seek to place it, define and regulate it according to long-accepted modes of thought and succeed in distorting it, and so obscuring and confusing themselves that they miss its practicability. It becomes to them a mystical term, a "metaphor," a peculiarly distinct point of view which certain psychologists, especially the psychoanalytic school, have taken to themselves and dared to extend beyond its first therapeutic limits.

All this is still due to the long-cultivated tendency of intellectual thought to cut itself off in static sections and then fix itself so intently upon these that perspective is lost and the constantly shifting real-

¹ Stewart Paton, M.D., "Mobilizing the Brains of the Nation," *Mental Hygiene*, July, 1917.

ity of life is missed. The essential unity of each life and of the race as well, which constitute the psychical life and therefore the psychological material in regard to either, is left out of consideration. Most simply stated, the concept of the unconscious is nothing more nor less than the recognition and pragmatic definition of such a continued unity.

Psychoanalysts, for it is they who have most utilized this concept and it is they against whom criticism is mainly directed, have invented no new fact. They have not even introduced a mystical or mythical *terra incognita*,² to which they relegate all that passes understanding and explanation, as has been stated. On the contrary they, under the leadership of Freud, have at least come scientifically to recognize that much of the mental life actually lies without the province of ordinary awareness which is called consciousness, but is still sending its influences streaming up to influence the psychic states and processes with which consciousness has to do. The unconscious, as they conceive it, is no convenient dropping ground, into which our ignorance of psychic content and vital, throbbing psychic processes, which make the whole of life, are crowded out of sight that we may escape their consideration. Psychoanalysis recognizes instead that there is this far vaster sum of experiences and values belonging to the mental life, which are not within the scope of consciousness nor even understandable in ordinary conscious terms of explanation. It has been the first to enter scientifically into such material, the existence of which had already been discovered intuitively by the artistic creator, the believer in myth, the religious devotee, the man of the folk or the man of learning who has at some time or other been made to pause before mysteries unknown or dimly discerned. All these testify, as indeed does common daily life, that a *terra incognita* already exists, and psychoanalysis, as a method of psychology, is distinguished in the fact that it would make that unknown territory, also, the field of knowledge and control. It believes that the science of psychology, in its avowed task of understanding human behavior and directing that through education and therapeutics, another form of education, to health and efficiency, can no longer allow such a *terra incognita* to withhold its material from investigation and consideration.

Let us be careful just here to avoid any mystic confusion in regard to this particular term for the unknown, which has been suggested by the critic. Not for one moment does the psychoanalyst conceive of the unconscious as a region set apart, as a compartment

² Haeblerlin, H. K., "The Concept of the Unconscious," this JOURNAL, Vol. XIV., p. 543.

of the human mind, or as a definite entity to be broken into for its secrets. The inadequacy of language, which is one of our static modes of expressing the inexpressible, always necessitates a certain amount of picturesqueness and even animism in which to utter abstract truths. From being misled by this the logical thinker has always to guard himself. The unconscious is therefore, let it be reiterated, merely a working concept to express that the mental life is a genetic and dynamic unity, of which only a small part, and for each moment a final end result, appears to conscious cognizance and thought. Much of that which is not immediately accessible or clear to consciousness can be readily recalled, as Freud has been at pains to point out. He designates this, for clearness and convenience, as merely hovering in the foreconscious. So much is easily recognizable. But can we therefore believe that mental life stops there? Can we accept the word of one of our psychologists that certain tendencies driven from consciousness, "nipped in the bud, simply disappear"? What is it to disappear? Can that which has been real, even psychically real, be annihilated?

This might be accepted practically and the scientific and social world be content to jog along in blissful ignorance, unconcerned for a further accounting for this disappearance, were it not for a vast number of individuals whom things of the past, even though they "disappear," continue vaguely, often most obscurely, to haunt. Thus the matter is brought into psychological circles with a threefold imperiousness of demand. Psychotherapy can no longer be denied a very important place in psychology. First, the number of individuals whom this newer method of research is discovering to be hovering on the borderland of illness, and for whom it is providing a means of understanding and a readjustment and return to a healthy way of life, emphasizes the practical necessity of such a deeper, more vital psychology. Inseparably connected with this is the subject of child study and education and control, both in child and adult life, which is the rational way of training for the future in order to check psychopathic development and attain a healthy direction of energy and interest, which will make for sound psychical life and social efficiency and usefulness. Does not this therefore fully comprise the aim and scope of psychology and such a field of endeavor alone justify it as a science seeking to maintain a place in modern practical society? This includes also the third demand which is made upon it, that, as a science worthy of its name and claims, it shall shrink from no field and no matter of investigation or stop until ultimate causes have been reached.

How then is this to be done without admitting some concept deal-

ing with the obscure, dimly discerned, but no less active and impressive psychic life which sends its influence over into consciousness? Freud has chosen to give it the descriptive name of unconscious. Be that as it may, the fact of such a psychical existence remains to be reckoned with. An attempt to give this concept of the unconscious an acceptable epistemological standing has stated it as³ "part and parcel of consciousness, and that one must be interpreted in the light of the other." An error has crept in here which seems to be a frequent one in the apparently difficult attempt to get into line with the notion of the unconscious. This is to turn things hindermost, but it effects a reversal of psychoanalytic thought. The latter would adopt these very words but in exactly reverse order. It could never conceive, as this author does, of the unconscious as a special phase of the conscious, but in the unity of psychic life, which extends backward to the beginning of sensation and affective experience in organic life and forward through the possibilities of the future, consciousness is but a temporary part and parcel of the unconscious. Or rather it is a phase of the whole past history of psychic life and of the possibilities which it but barely touches as it exerts its selective influence each moment through the present upon the future. Therefore consciousness can never be understood or interpreted except in the light of the greater psychic life of which it is a part.

Thus we are brought to the historical justification of this concept of the unconscious. Anyone familiar, through personal experience, with the confessional of the psychoanalytic treatment hour, has had opportunity to watch the struggle with repressed memories and painful disturbance occasioned by displaced affect, and the struggle into consciousness of some forgotten, now unconscious, experience, which finally reabsorbs and then through a new and better conscious pathway discharges the affect in the service of freedom and health. Such an one has no need to be convinced of the actuality of repressed memories, or of their psychic vitality. For such an one the preservation of the past becomes a clearly established fact. Let it not be forgotten that it was first the experience of such affective but unconscious memories with difficulty brought to consciousness, that led Freud to formulate this hypothesis to explain facts with which he was confronted unexpectedly in his practise.

It has been objected that Freud has extended his theory unjustifiably upon children as have also his followers, without basing their statements upon observation of children, and that therefore we have no basis here for his theory of repression and the unconscious content which has suffered such repression. Pathological material, it is contended, is not sufficient as direct material from childhood. Again

³ Haeberlin, *loc. cit.*

familiarity with clinical material, which pours forth through dreams and reminiscences, must firmly assert the reality and the universality of such a history of development in childhood. Development takes place through the cruder, more concrete, that which culture gradually pushes out of sight, and through repression, which naturally follows upon this, even as Freud has outlined it. The universality of such experience must be insisted upon because of the very large number of patients and the varying grades of psychic disturbance which come for readjustment. These constantly enlarge the psychoanalyst's horizon more and more to include all individuals in the same psychic development, only with varying degrees of success in making healthful use of the factors of repression and sublimation of such repressed material. Moreover, he grows less inclined to separate out those who are thus sick as a distinct class whose experience is not typical of general experience and instructive for its understanding and comprehension. Yet to guard against the charge of a dogmatic extension of pathological material to those who are considered normally apart, let it also be denied that there has been no psychological observation of children and the content of their psychical experience. Such study is necessarily still in its earlier stages, but a number of children have been intensively watched with a keen interpretative eye to the psychical values manifested in their experience. The manifestation, moreover, of the shifting of these values with the advancing demands of culture and the repression of them into early unconsciousness, furnishes convincing proof that Freud again advances no mere theories in his studies of child psychology. Many of these observations have also been offered in the literary reminiscences of the childhood of various eminent writers.⁴ Here again courage is needed to recognise all psychic reality according to its shifting value in the economy of development, individual and social, and to include this in all psychological consideration. Here must be seen the value of the concept of the unconscious as explanatory of what would otherwise form no small part of the obscurity and bewilderment attending upon the effort to understand and control and direct an individual life to efficiency and usefulness, individual and social health. And without this, again be it said, there is no justification for psychology.

For the individual life, then, there is a past formed by this shifting of values, by which certain things must be relegated to oblivion so far as consciousness of them goes or the direct turning of interest upon them. Yet the ready return in the various forms of wit, from the simplest or the crudest to the most subtle and the most re-

⁴ See von Hug-Hellmuth, *Aus dem Seelenleben des Kinder, Vom wahren Wesen der Kinderseele, et al.* The first named is appearing in the *Psychoanalytic Review* for the current year.

finer, denotes their only partial oblivion and their activity still even in the old direct form in some more remote part of the psychical life. The same may be said of the readiness to respond emotionally to the vague suggestiveness of works of art, of subtle stimuli of many kinds, by impulses which surely do not have their origin in present experience nor in any consciously remembered psychical content. Sometimes it is the startlingly frank dream of the night, sometimes the sudden unguarded impulse to forbidden deeds of pleasure or violence, which remind us that we carry with us some elements of a simpler but cruder time, when the restraints of culture were not operative as they are now. We are pressed upon continually by factors which can not be contained in explanations that lie only in the terms of present conscious processes. They are not part of these processes, for they come unbidden, often consciously undesired and unwelcomed, and at best only pour an influence upon consciousness, which is not of it (consciousness) for it is from beyond it. For all this the "unconscious" serves as a comprehensive term, a workable tool whereby to take hold of it and reduce it to a certain scientific order of observation and control.

It is not alone that certain elements of past experience are forbidden by advanced culture and that therefore the content of the unconscious partakes only of the nature of the tabooed. Nothing in the economy of life would be preserved unless it had some usefulness either in its direct form or, if that becomes taboo, in a sublimated form which retains the original dynamic value. So the unconscious material lies there, charged with affective value, at the disposal of consciousness. This is what is meant by the control which it is the aim of psychology to bring about. It depends upon making known to consciousness what a storehouse of material is at its disposal to be applied to the enrichment of the present moment, which is forming the future. Not all the content can be known since it is indeed a veritable "jungle" of past experiences, but conscious attention can be trained to be on the alert to recognize such psychic existence and the material from it. This through associative stimulus comes crowding up to be included in present experience and to find discharge for its pent-up affect, so that selective control may be exercised and useful sublimation be effected. Thus each one may become his selective agent from this storehouse of dynamic power, and moreover learn to transpose the dynamic pressure over into useful activity by the paths of sublimation. To this the nervous system has been adjusted by ages of exercise in the service of a selective consciousness. As Bergson has put it: "The cerebral mechanism is arranged just so as to drive back into the unconscious almost the whole of this past, and to admit beyond the threshold only that which can cast light on the

present situation or further the action now being prepared—in short, only that which can give *useful* work.”

So far merely the individual past has been considered and the need to designate and explain that by a suitable term. What relation has this to the extension of this concept to the cultural sciences and arts, and does it grant any justification to such an extension? No individual comes into the world a discrete unit, separated from the physiological history of the race to which he belongs, nor indeed from that of the organic development of life which preceded our race. Neither therefore can his psychical experience be considered apart. An immeasurable history of development through the simplest reactive sensation and through a growing complexity of affect, until conscious intellect entered in to control, modify and enlarge experience, is the psychical history of organic life. No more can we cut off the individual in our thought and investigation from such a historical past, which he still drags behind him, than we can refuse to consider in his physiological organism the influence and trace of his racial recapitulation.

We can not therefore reach ultimate causes and explanations and attain full working knowledge and control of this psychical life unless investigation reaches beyond the individual span. Individual psychology must depend upon racial psychology, and this can only be reached through the forms in which it has expressed itself or is still expressing itself in the various grades of human culture. Therefore anthropology, mythology, religion, linguistics, must come into the line of study. They must contribute their treasures of the unconscious life of modern civilized man. We must see in them the unconscious in the making, when it was still consciousness and had not yet passed under repression or into the apparent oblivion which followed upon the advance of culture.

There is therefore not only a very practical reason for including the cultural sciences in the psychology which works with the concept of the unconscious, but the term unconscious rightfully belongs among them. If we fix our thought once more on the essential unity of psychical life we avoid confusion in thus applying the term. It is not then that the “unconscious” is employed loosely and chaotically where the spirit of the specialist will. It is merely attached to its own. No less vague and undetermined is the field here, to be sure, than in the realm of individual psychology, for it is filled with the content of an immeasurable past. But the unity inherent in this concept rediscovers and preserves historic order. Here it is necessary to adopt the idea that any one part of the mental life is indeed part and parcel of a greater whole. The past is there, whether racially or individually, pressing against the present mo-

ment, but it itself was created from the psychic experience of the present moments, dropping their material as each passed into the storehouse of the past. We look back upon this past experience grouped under one or another form of activity, viewing it in its crystallized product as a tribal organization, a religious cult, a mythological system, a language, and we call our observation cultural science. Yet this only has to do with psychical development as seen in some of the more manifest products of psychical history. To some extent in its various crystallized group forms such psychical life has been kept before man's conscious thought. Thus alone it can never be understood, and has driven men in many directions for explanations in consequence. These varied psychic products must be analyzed into the elements which had a value other than that which our ordinary conscious point of view, forgetting the historical development of these things, gives to them. There are found many elements here, which in our psychic recapitulation find explanation and give explanation in return, in the study of individual psychology in the light of the concept of the unconscious.

Artistic literature, the plastic arts, music, all, likewise because of their origin from the psychic heart of things, have a claim upon this concept. They too reveal these inner hidden values and make them appreciable in a special form of sublimation. Therefore they too, for the aid of psychology, may come to this touchstone of a psychological investigation which works with the unconscious.

This then need no longer be a stumbling block to the earnest psychological investigator, nor need it seem to him to extend itself unwarrantably to include these territories remote in time and only apparently remote in interest. Psychical unity demands that there shall be no separation of one field from another in investigation. All contribute to the knowledge of the full psychic life, what it contains in history and in potentiality, the stratified remains of earlier forms of thought and experience and the influence of these still streaming over into modern life. For it can never be forgotten or neglected that psychology deals with vital, dynamic phenomena, not with complete discarded fossils of the past, nor yet with interests which belong exclusively only to the present. The concept of the unconscious has been adopted to express a conviction of the survival of a vitally affective past which influences the present, and to make this accessible to advancing scientific investigation.

LOUISE BRINK.

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ANOTHER COMMENT ON PROFESSOR WARREN'S
ANALYSIS OF PURPOSE

THIS brief statement is the attempt to indicate a point of view that has not been thought out carefully by the writer, and may, therefore, meet difficulties he has not anticipated, but which should not be unintelligible on that account. It occurred to me in the course of meditating the statement of a really brilliant philosopher who said in conversation, "I do not believe in freedom because the idea of freedom is not scientific." Now this, it seems to me, sums up the spirit and conclusion of Professor Warren's essay "A Study of Purpose"¹ as well as of his article on "The Mechanism of Intelligence."² It would be interesting to review the various responses that Professor Warren's article called forth,³ taking up with them Professor Sheldon's essay on "A Definition of Causation,"⁴ but I fear that my own idea would get lost in so much discussion.

Whether we use the word freedom, or purpose, or intelligent control, makes no particular difference. The simple fact is that the idea of mechanistic determination is opposed to the idea signified by those words and by plenty of others.

Now, as my friend the philosopher said, "freedom is not scientific," and, of course, it is not. And this means that the purpose of science presumes a certain point of view and a certain postulate. In words that may be old-fashioned, but that are simple, the purpose of science is to explain, that is, to find the group of facts equivalent to the fact to be explained in the sense that when the former are provided, the latter will be produced. Whether this is the whole duty of science or not, we need not discuss just now. It is, in any event, a very important part of science, the part that gives to science its human significance, since by it we learn to handle facts as resources. In the present statement, however, it will do to say, with respectable tradition, that science looks for causes, and aims to explain.

Now when a cook prepares a meal from the data of the ice-box, she postulates that those data are such as will conform to her purpose. And when a builder orders materials for construction, he assumes that with them construction can be carried out. If the result

¹ This JOURNAL, Vol. XIII., pp. 5, 29, 57.

² *The Philosophical Review*, Vol. XXVI., No. 6, November, 1917.

³ Lawrence J. Henderson, "Teleology in Cosmic Evolution," this JOURNAL, Vol. XIII., p. 325; Mary W. Calkins, "Purposing Self *versus* Potent Soul," *loc. cit.*, Vol. XIV., p. 197.

⁴ This JOURNAL, Vol. XI., pp. 197, 253, 309, 365.

is not as anticipated, then there has been a mistake somewhere. If things do not show the "structure" expected of them, we have been misled (we *say and believe*) into trying to use something else instead.

We no longer confuse formal truth (= dialectical consistency) with material truth. We know now that logic is not an existential science, but a technique of formal implications. If dialectic is not existential, what is? If no amount of pure logic would demonstrate the existence of a single dodo in the wilds of Australia, what would? Evidently, or so it seems to me, observation provides the authority for existential judgments. The only way to prove that a dodo exists, one perfect dodo, if you like, is to produce it. If, now, empirical observation is the only basis for existential judgments, how does this bear upon the statement that everything that happens is causally determined in the sense of this discussion? I admit the looseness and frequent ambiguities of my account, but I think they do not obscure the real issue.

Somehow the old conflict between faith in freedom and faith in determinism persists, in spite of the fact that freedom is not scientific and that we see quite clearly that it is not. What can science do with a category that denies the possibility of explanation by causes, except deny it? It can do one thing that would seem highly reasonable, and that is to recognize the methodological function of its own category of causality. Universal determinism is clearly not an empirical discovery if observation is the one criterion of existential judgments. Universal determinism is a theoretical position, and there is no reason to be surprised if a theoretical position misrepresents any data to which it does not apply, if there be any such. And whether there be any the theory itself could never say, since it is a generalization to the contrary based upon other data.

In a word, the principle of universal determinism is not a metaphysical discovery. No doubt, if I were more conscientious I would write a long chapter at this point, defining the word "metaphysical," but, frankly, I am not so conscientious as that. But why is this generalization so confidently made, and why does he who is no less confident of freedom, and of the power of intelligently directing events, feel so perplexed and so deferential to this technique and theoretical generalization? From the point of view of science, freedom has not a foot or a crutch to stand on. Why then does the discussion persist in one terminology or another? Why does Professor Warren feel it incumbent upon a scientist to refute the popular impression that "purpose" makes a difference to what happens, and why does his very interesting refutation bring out a throng of protests? What gives such irrational, unscientific, and embarrassed

vitality to an idea that can not possibly have any scientific standing? This is really, I think, a fair question. It seems to me that one possible answer is suggested by the above considerations.

Why, however, the scientific generalization? It will hardly do to say "because it is scientific"; that is just what I want to have explained. And what if it is? How does the adjective "scientific" confer justification? Again, one answer at least is easy enough. The spontaneous is the region of the uncontrollable. Causality is a principle in the service of practical intelligence. Whether or not it is more, it is that at least and that to begin with.

Determinism defines process and events as capable of being directed. If it has been found out that *A* results from the combination of *X*, *Y*, and *Z*, then we know what the conditions are of getting *A*. Whether we can control those conditions and thus get *A* is another problem, and not a scientific one. Determinism is a postulate of intelligence in the world. Morality is abandoned to the blindness of the categorical imperative, to the obsessions of conscience, or to the whims of romantic preference unless particular results are to be brought about in particular ways. Intelligence can exist only where objects to be acted upon show docility and routine. Spontaneity on their part would be fatal to every plan and programme. To quote from a clever skit on psychology⁵ in which a visitor to a psychological laboratory is obliged to check his soul at the door, the "pilgrim" is told, "You can not take it in, because if a single live and active soul got loose inside, it would make no end of trouble, and might wreck the whole science of psychology."

This symbolizes well enough what, it seems to me, is really the situation. It is not unlike what Kant supposed it to be. Only instead of being transcendently imposed by the constitution of the mind, a category is imposed empirically by the requirements of practical intelligence.

This suggestion is in nowise offered as an experiment in apologetics. The dogmas of scientific method are, however, no less dogmatic than the dogmas of business and of traditional patriotism.

A postulate of practical intelligence has been naïvely universalized so as to be applied to its own applications. To conceive all things as producible, controllable, directable, including the imagination to be trained, the will to be educated, the intellect to be disciplined and informed is, apparently, to conceive them as the concrete effects of those determinate conditions which we have found out must be assembled if the effects are to be secured.

If the point of view that turns out to be empirically justified is

⁵ "The Pilgrim and Psychology," *The Unpopular Review*, Oct.-Dec., 1917.

based upon our success in promoting by it the conditions that are favorable to man's existence and to the realization of his potentialities; if, to speak the language of the philosopher human κίνησις from δύναμις to ἐνέργεια is thwarted without it, it is not surprising that the principle of causality has been given unlimited scope, and that a gratuitous perplexity in metaphysics is piously esteemed.

This rambling screed began by conceding the claim that "freedom is not scientific." If we understand that the business of science is "explanation by causes," "freedom" certainly is not "scientific," but if we say that science aims at comprehensive and precise "description," perhaps the scientific point of view might be applicable to whatever can be observed.

Let us, just as a sporting experiment, perhaps, not minimize the controlling influence of human interests, morality, civilization, order, intelligent direction, over what we somewhat grandly label the scientific point of view. If intelligence, when successfully applied to the physical world, gives us these good things, it is no far cry to the inference (unjustified perhaps in metaphysics and in science) that intelligence is practical and a source of power, and that its chief postulate is to be understood accordingly.

WENDELL T. BUSH.

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REVIEWS AND ABSTRACTS OF LITERATURE

Automatisme et Suggestion. DR. H. BERNHEIM, Professeur Honoraire à la Faculté de Médecine de Nancy. Paris: Librairie Felix Alcan. Pp. 168.

Professor Bernheim in this little work deals with some rather ancient problems: automatism, sleep and dreams, somnambulism, the psychoneuroses and psychotherapy. It is written for those interested in psychology from the standpoint of a physician.

Professor Bernheim argues that hypnotism is not a specific or a morbid mental state, but only a form of sleep; that hypnotic suggestion is not different from other forms of suggestion; that somnambulism and trance and hypnotic states are only acted dreams. All of which we think has been accepted long ago.

Professor Bernheim gives a chapter on the psychoneuroses which is precise and clear, as far as it goes. He had apparently never heard of Freud or Jung or Bleuler; at least he never mentions them. He does not believe that there is any subconscious mind—which is very heartening and delightful. At least he says that the *psychisme* is *always conscious*. The mechanism of elaboration is always auto-

matic and unconscious. The author puts wise limitations to the term hysteria, a word rarely used now by cautious neurologists. What he calls "emotive neurasthenia" or casual and symptomatic neurasthenia is, as he says, a rare condition; but what he calls and well describes as "true neurasthenia" is now recognized to be an abortive type of recurrent melancholia.

Professor Bernheim's book is lucid and logical, with perhaps a somewhat narrow outlook. It gives very well the point of view of the old Nancy School, but it leaves out Vienna and Zurich, whether by reason of age, or war or conviction, we are unable to decide; but feel like saying, "*Vive la France.*"

CHARLES L. DANA.

NEW YORK CITY.

JOURNALS AND NEW BOOKS

THE PHILOSOPHICAL REVIEW. November, 1917. *The Nature of Certainty* (pp. 585-601): A. K. ROGERS.—Distinguishes certainty from necessity, concluding that there is no such thing as a necessary truth that is ultimate. Certainty depends on self-evidence. There follows a definition of self-evidence which is then applied to the psychological existence of states of consciousness and to assertions involving descriptions of intellectual content. *The Mechanics of Intelligence* (pp. 602-621): HOWARD C. WARREN.—"The aim of this paper is to examine the way in which 'intelligence' acts upon 'voluntary' muscles in the light of present-day knowledge of mental and physiological phenomena." Concludes that every manifestation of intelligence can be adequately explained in neural terms and can be brought into line with the concept of causation and rejects the view that consciousness is ever an efficient cause. *Phenomena and their Determination* (pp. 622-633): GRACE ANDRUS DE LAGUNA.—Distinguishes real phenomena from pseudo-phenomena; also distinguishes analysis of a phenomenon into its constituent elements from its reduction to a collection of items occupying the same *locus*. In the light of these distinctions the errors of philosophical atomism are pointed out. *Professor Husserl's Program of Philosophic Reform* (pp. 634-648): ALBERT R. CHANDLER.—Professor Husserl dismisses historical *Weltanschauungsphilosophie* as anti-scientific and empiricism as pseudo-scientific. He then proceeds to describe a method by which philosophy can be lifted to the plane of an objective science yielding definitive results which can be formulated in text-books and learned. The present reviewer concludes that the method thus set forth can not substantiate its claims. Reviews of Books: A. Seth Pringle-Pattison, *The Idea of God in the*

Light of Recent Research, ERNEST ALBEE. John Elof Boodin, *A Realistic Universe*, R. A. TSANOFF. Wilhelm Wundt, *Elements of Folk Psychology*, H. N. GARDINER. *Notices of New Books. Summaries of Articles. Notes.*

Drake, Paul Harris. *Democracy Made Safe*. Boston: LeRoy Phillips. 1918. Pp. x + 110. \$1.00.

Kallen, Horace Meyer. *The Structure of Lasting Peace: An Inquiry into the Motives of War and Peace*. Boston: Marshall Jones Company. 1918. Pp. xv + 187.

Teggart, Frederick J. *The Processes of History*. New Haven: Yale University Press. London: Humphrey Milford. 1918. Pp. ix + 162. \$1.25.

NOTES AND NEWS

At the summer session of Cambridge University, commencing August 1st, a special series of lectures will be given dealing with the United States of America. Among the lecturers will be Professors George H. Nettleton, Henry S. Canby and Henry A. Bumstead, of Yale; Professor J. W. Cunliffe, of Columbia; Professor George Santayana, formerly of Harvard, and Sir William Osler, formerly of Johns Hopkins and now of Oxford.

FREDERICK W. STEACY (Ph.D., Teachers College, Columbia University) has been appointed lecturer in education at McDonald College, the teachers' training department of McGill University, Montreal, Canada.

Number 25, November-December 1917, of the *Revue de Théologie et de Philosophie*, published at Lausanne, is intended to celebrate the centennial of the birth of Charles Secrétan. The editors regret a delay of several months in the issue of this number.

Les théories des alchimistes et leur influence sur les premières doctrines chimiques is the title of a brief well documented article in the *Revue Générale des Sciences* for April 30, 1918.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

LITERAL AND SYMBOLIC KNOWLEDGE

THE PROBLEM

THE aim of intelligence is to know things as they are. The curious crave to see what is actually going on; it is no invention or experience of their own that instinctively interests them. Philosophers pursue the same end somewhat more steadily, when they seek general intellectual dominion and perhaps think they have attained it. The thought of any literal and final insight may be disclaimed and even despised in the practical arts and sciences, but only because here, too, people are preeminently interested in reality, which they feel is grasped by learning how things work and may be controlled, rather than by any private and visionary theory. What, indeed, could be more real in things than what operates in them? The inert, the sensuous, the ideal is no object for an animal mind. The sort of knowledge that successful practise involves and confirms need not be literal or exhaustive, but it must be knowledge of efficacious reality, knowledge of things as they are.

At the same time, differences of position and of perceptual endowment compel animals to approach the same energetic things through different avenues and to express their discoveries in different terms. Study of these instrumentalities may give rise to what is called the theory of representative knowledge, a theory which would interpose a screen of ideas between the mind and things and would prove that the essential aim of intelligence is hopeless and that any claim to know things as they are must be an illusion. Thus representative knowledge (like representative government, very often), far from representing its alleged constituency, ends by instituting an opaque medium, with its own character, interests, and life, which renders all reference to a constituency superfluous. The way is then open for the skeptic to deny the necessity of any realities behind appearances. Of course, the relativity of appearances to each observer, on which this return to absolutism is based, was discovered by studying those appearances and those observers in the midst of the real world they were moving in, and were distorting in their

various characteristic ways; therefore this skepticism is false, if its grounds are solid. But a self-contradiction, when it seems inevitable, justifies the most genuine skepticism, which is not a firm denial, but a conscious oscillation between contrary views; and if appearances are all we can ever discover why should we imagine anything beyond? Need we ever have imagined it? Soon the skeptic obeying the vital tendency towards a stable equilibrium, will become a dogmatist in the interests of his disruptive insight. He will affirm that these so-called appearances are the only realities, and that after all, since we know these directly, by an infallible knowledge of acquaintance, the aim of intelligence is perfectly attained, and we know things exactly as they are.

In this way the theory of ideas, after making a false exit in the direction of agnosticism, turns upon us as if by magic with a proof of infallibility. But such evolutions of theory evidently go too fast and too far; they bewilder us by treating additional considerations, which should serve to enlarge science, as if they were novel principles by which science is to be revolutionized. Even if ideas intervene between us and things, it does not follow that the ideas must become the object of knowledge and keep the things from being known. Words often intervene between us and ideas, but they do not necessarily prevent us from gathering what those ideas are. So ideas themselves may be an instrument or vehicle for knowing things: or if by ideas (which is an ambiguous term) we mean thoughts rather than images, they may be our knowledge of things, and by no means objects we perceive.

A total revolution in science might indeed be legitimate, if the foundations on which we had previously built were radically wrong; but a revolution which promises us infallibility, on the ground that immediate experience is all there is to know, begins by announcing the bankruptcy of knowledge, and is a philosophic catastrophe. In human knowledge, as in human life, there is travail, error, and the pursuit of objects difficult and glorious to attain, but perhaps, as conceived, often unattainable. That we possess all the while, without much caring for it, knowledge of acquaintance with immediate appearance, and suffer, as it were, from our ideas, as we do from our passions, is true enough; and this fact, when we reflect on it afterwards, may turn out to be important for pure esthetics and pure logic. There are in perception intervening images, necessary but instrumental for effective knowledge, which we instinctively overlook in our readiness to react on our dynamic environment and in our haste to understand it. Later we may notice these images and dwell on them delightedly for their own sake, when we regain the innocence of the eye and become passively contemplative. But the

urgent and perilous adventure of human knowledge is not of that sort: it regards surrounding, oncoming, undiscovered things, enemy preparations and silent opportunities outside of us, on which our fortunes depend. If our philosophy decrees that these momentous things do not exist or are unknowable, it becomes a mockery to us in our plight. The shuffling of sense-data is not understanding: it is the amusement of a self-spoiled mind, a psychological game substituted for a moral enterprise.

The skeptical suspicion that the aim of intelligence is doomed to defeat and that things as they are are unknowable, may be made articulate in the three following propositions.

First, that the very notion of knowledge or of an external reality to be known is absurd and self-contradictory.

Second, that reality is necessarily of such a nature as not to be expressible in any thought or open to any perception, human or other.

Third, that human thought in particular happens to be so limited and warped, and things happen to be so constituted, that no knowledge of them is possible to us.

ALLEGED SELF-CONTRADICTION OF TRANSITIVE KNOWLEDGE

The first proposition, which is the most radical, has never, so far as I know, been clearly put forward: yet it underlies all modern idealistic schools, perhaps even that of the radical empiricists and the new realists. A frank statement of the principle concerned might run as follows: The content of mind or thought is always its own present state. The postulate of knowledge, however, is that a present state of the self can somehow peruse something else, for example a past state or a future state, or something not a state of mind at all: which is evidently impossible. If in trying to defend knowledge we say that at least a mind or thought knows its own content, the phrase may be admitted, but only on the express understanding that this content is not an object, either physical or ideal, separable from the experience of it. The content is properly the quality of a state of consciousness, not its object. Therefore consciousness can know neither itself nor anything else; it merely *is* its content—a certain complex of terms in relation. It therefore makes no difference whether we say that consciousness is all, and that its objects are simply its content, or whether we say that the objects are all and that consciousness does not exist. In either case, knowledge is impossible.

Such, if I do not misconceive it, is the reasoning of all immediatists, whether of the mystical or the empirical type. It is pene-

trating reasoning, but it shows a great want of sympathy with intelligence. Knowledge leaves these minds unsatisfied, being always too little or too much for their critical conscience. They would like to conceive knowledge on the analogy of digestion or growth: they crave possession and expansion, not reports. The metaphor about the "content of consciousness" itself indicates this: it substitutes inclusion for pointing. But as a matter of fact, intelligence "points," as a dog does: it has alertness and intent: and knowledge reports upon subject-matters that indefinitely outrun its deliverance. Those who are in sympathy with intelligence and knowledge could not fail to take them in this sense.

The utmost approach to identity there can be between a mind and its object, when knowledge is perfect, is that the full essence of the object, and nothing more, should be present to the mind. If the object is ideal, like some Utopia or the triangle, the intuition, while introducing nothing foreign into that essence, will itself be an event and an existence, which the essence is not: so that the mental act and the ideal object even then will be far from identical. On the other hand, if the object is an existence, the perception or belief, if adequate, will describe the whole essence of the object: but in addition it will affirm (at the instance of the bodily response and practical endeavor which perception and belief rest on) that this object exists, and exists in a certain natural locus, related to that of the observer, here, there, or at such a time. In this case the diversity between the mind and the object amounts to the separable existence of each; for if the perception or belief is false, no object such as is described will exist at all where it is asserted to exist; and if the perception or belief is true, the object will be a natural fact on its own account, which might have existed quite as well undiscovered, but which very likely has contributed to produce, elsewhere and later, this additional fact—the knowledge of it.

Intelligence conceived after this fashion is something hazarded and subject to error, but it is not self-contradictory nor absurd, and may often yield true knowledge. Indeed its animal basis, which requires the cooperation of external influences, and its intent to describe these influences, tend to keep it true or at least relevant.

It it be still asked how intent can fix upon a thing at a distance, or of a different nature from the present sense datum and make it its present object, the answer must be, in brief, that sense data are initially signs: and that we may be cognizant of the object signified either antecedently, in consequence of some direct earlier perception (as we know the sound of a printed word from having heard it) or subsequently, by merely yielding to the suasion of the symbol and exploring what it points to—as when we raise our eyes on being

startled by a sound, or follow a scent, or feel the strong attraction of beauty. That the sign is a sign, and that there is something behind it, is a fact conveyed to us by the concomitant reaction of the rest of our organism to that particular impression. This reaction is not caused by knowledge, it is itself the ground of knowledge. The ground of the reaction is in some cases an innate instinct, in other cases an association established by training and experience. The claim to transitive knowledge, the assurance that our sense data are indications of further realities and not dead objects in themselves, is the intellectual transcript of a specific activity aroused in our bodies, or of readiness for such activity. Stupidity is the conscious expression of sluggishness, intelligence that of plasticity. Transitive knowledge simply recognizes in a judgment the actual relation in which our living bodies stand to their environment. If it be urged that such clairvoyance would be a remarkable and singular gift, we may reply that the gift is indeed remarkable, that it makes all the moral difference between animals and vegetables, or even between organic and inorganic bodies, and that it is called sagacity.

ALLEGED UNKNOWABILITY OF THE REAL

That there is an unknown reality behind appearance in many cases must certainly be admitted: otherwise no investigation could have any object or any success. Those who a generation or two ago talked about the Unknowable were open to all sorts of attacks—for verbosity, for arrested skepticism, for lack of dialectical acumen, for a sham deference to religion. Nevertheless the most useful criticism of them might have consisted in considering whether we may reasonably suppose undiscoverable things to exist, and in distinguishing the senses and degrees in which things, the existence of which we know, may remain unknown in their true character.

There is one sense, indeed, in which the notion of the Unknowable is radically absurd, namely, if it be called unknowable because it is supposed to have no nature or essence of any sort, so that not even omniscience could specify what it was. A being without any essence is a contradiction in terms. The existence of something without quality would not differ from its absence nor from the existence of anything else. There would be absolutely no meaning in asserting it—since what was asserted would have no character. This then is a sense of the term unknowable which those who defend the notion—and they include Kant as well as Spencer—could never have intended, although their language sometimes suggests such an impossible position.

What mystics have often held is rather that the real has a

particular essence (probably the essence of existence, which they call pure Being) but that no further predicate and no appearance has the least value in describing that essence. Every other predicate or appearance is particular and, like the dome of many-colored glass, both adds to pure Being something more (which they say can not *be*) and subtracts something from it: because, as each bit of stained glass in giving passage to rays of one sort excludes the rest, so every particular predicate narrows down universal being to one species. The great residuum which is thus denied (as all the future would be denied if any one said the real was the past) ought indeed, they maintain, to be excluded from pure Being in so far as that residuum includes other essences than the essence of existence; but it ought to be included in pure Being, in so far as every part of that residuum contains this essence. Thus, for instance, both past and future would be real by virtue of the pure Being they had in common, but all differences between them would be unreal.

This view is inspired by a mystical love of unity and peace which is morally respectable, like any sincere passion; but logically it is a mere hocus-pocus. The essence of existence, like every other essence, does not exist of itself; and when it is predicable of other particular essences, it is they that exist in all their variety, and not merely the essence of existence that exists in them. In other words, the essence of existence, or pure Being, is merely what all existences have in common; but all of them (save perhaps one which should have the single property of existence) have other qualities as well, so that other particular predicates or appearances may describe them truly. Pure Being, if it exists at all, is only one (and the least interesting) of these knowable things.

For be it noted, pure Being is not unknowable. Although we may well doubt that anything so simple actually exists in nature, this predicate may be seized alone, like any other, and we actually do seize it alone sometimes. The essence of existence is as far as possible from being the essence of nothing. It can become the object of a direct experience when, more special sensations being fused and blurred, we endure mere strain and duration without diversity—a most acute feeling. This element is no doubt always faintly present in experience, so that, as the mystics aver, we always have an adequate intuition of pure Being: but when isolated, this essence is seen to be very particular in itself, and easily recognizable. Nevertheless, because by definition it has no *other* quality than brute being, some logicians identify it with nothing, by a slight equivocation between nothing and nothing else.

The difficulties that surround the notion of mere existence are not native to it, but arise from a false indentification of it with the sub-

stance of natural things, and the consequent paradox that in knowing natural things we truly know only pure Being. This identification is a sheer confusion. The substance of natural things—however heterogeneous it may be from their sensible appearance—must, to be their substance, contain at least as much diversity and articulation as they do; for obviously what is identical everywhere can not be the ground of the differences between one thing and another; and what does not vary can not be the ground of variation in appearances. I do not mean to say that the variety of all substance must be itself a variation in time: the letters on this page do not move, yet they guide the changes in the reader's perceptions. To be sure, if the page stood alone and no eye ran over it, it would give rise to no successive appearances; so that when an unvarying substance is the ground of varying phenomena, another substance, itself in motion, must co-operate, to read off the changeless variety in the first substance and turn it into a series of changes.

If appearances, then, have a basis at all, this basis by definition must explain the diversity in the appearances, as well as their common properties or continuity; but it does not follow that the diversity of the substance must resemble that of the phenomena. The latter may be signs, not copies, of their ground, and heterogeneous expressions of it (like a good translation) even when they are adequate. Where they differ, what determines the original element in the expression, and whence is it fetched? No doubt in many cases it is drawn bodily from some associated object, as familiarity with the English language helps the reader to add the intended sounds to the letters on this page. But often the element added is a spontaneous creation, generated in the very act of expression, as the emphasis, interpretation, pleasure, or displeasure of the reader expresses a reaction of his organism under a stimulus never exactly applied before. And these elements are fetched neither from the printed page nor from the reader's past, nor telepathically from the author's long-lost intuitions: they are unprecedented, yet the creation of them, we may presume, is fully determined by the conjunction of dynamic processes, itself unprecedented, which marks the present moment.

Now it may be suggested that all phenomena are such spontaneous creations, generated by substances entirely heterogeneous from them. It would follow, of course, that we could give no account whatsoever of these substances. Even such notions as those of variety and variation would be only symbols for quite dissimilar properties in substance, properties which truly grounded these phenomena without resembling them.

Many mystics have inclined to this view; they are not absolutely faithful to the notion that pure Being, perfectly intuited by them at times, is the only reality. Yet they are faithful enough to it not to admit that any diversity (such as is implied, for instance, in omniscience or in the truth) or even any quality like unity or goodness is *literally* present in substance: for that would contradict the mystical premise that all appearance is superfluous to reality, and irrelevant to it. They steer a middle course, saying that knowledge, unity, and goodness are nearer to the nature of the real than the opposite qualities would be: so that the real is sometimes called by them supra-one, supra-good, and supra-intelligible. This reality seems, then, to have a more pregnant essence than pure Being: it is a fountain and focus of existence and of form; yet no predicate that we can utter or conceive can be literally asserted of it. The term unknowable, if applied to it, signifies that human categories can not express any part of its essence truly. Nevertheless, this ineffable essence is definite in itself, since some of our improper expressions or symbols for it are fitter to express it than others are.

It may seem a short step from saying that the real can only be expressed improperly to saying that it can only be described inadequately. Yet the difference between the two positions may ultimately become very great. If we hold that the senses and intellect can not know reality because they are too elaborate and articulate, the moral is, if we wish to know reality, to cease investigating and thinking. If we hold, on the contrary, that our human faculties can not know reality because their scope and distinctness are inadequate for the task, the moral is to try to enlarge and to sharpen them. So, for instance, when Plotinus said that the real could not properly be called one or good, because these are predicates, and the real admitted of no predicates, he turned his face towards silence and ecstasy; and but for the moral conviction, which Plotinus retained independently, that unity and goodness are on the path to God, his doctrine might have led back to a blank Absolute, to which all our thought and virtue were irrelevant, and which was so rudimentary a thing, perhaps, as mere life or the sense of duration. When on the other hand Saint Athanasius said that to call God one was inadequate, because while he was one God or one essence he had three hypostases or persons, the layman might well be puzzled; but the curious intellect at any rate was confronted with an express problem, and stimulated to formulate the Athanasian creed, or one no less articulate contradicting it: so that all human faculties were hotly and hopefully called forth, even if only to be wasted. The conclusion will be that we can know reality in part, both by reason

and by experience, we being akin to it in some measure; but that its nature is partly alien to ours and supernatural; so that we must always continue to face it with humility and contented ignorance, as well as with attentive scrutiny.

Why are our faculties likely to be wasted in investigating the supernatural? Not, I think, because it is presumably too unintelligible to reward attention. Many things quite unintelligible (the beautiful, for instance) fully reward it. The reason is rather that the supernatural, while supposed to be the source of many if not of all phenomena, is assumed to have no such structure, growth, and distribution of parts, as the basis of appearances must have, if it is to account for them or make them predictable. This defect might be corrected by conceiving a substance immanent in natural things yet common to them all and continuous throughout their breaks and alternations. Such a substance would not be supernatural, but it would be hypothetical and imperceptible. Such principles would be, for instance, the soul, or a diffused psychic substance sometimes gathered into souls; or again a formal principle like a transcendental will, law, or idea, governing things and events without being one of them. These formal principles have this advantage over concrete imperceptibles, like the deity, that there need be nothing occult about them; on the other hand, unless they are invoked superstitiously, formal principles are descriptions and not grounds of what happens. They cover the facts at best only in their most general outlines; no particular event can be deduced from them. The moral superiority of the supernatural over the transcendental does not concern us here, but it is also immense; because the supernatural, in virtue of its unfathomed nature, can involve all manner of supplements and transformations (such as heaven) outrunning our experience, whereas the transcendental is merely the method of our present experience made absolute and irrevocable.

ALLEGED INCOMPETENCE OF SENSE AND INTELLECT

The obstacles to knowledge which we have considered so far arose from some hypothesis as to the nature of reality—that it was non-entity, or pure Being, or inexpressible, or supernatural, or imperceptible. An easy escape from such difficulties is always at hand; we have only to deny that reality has any such nature. We can not find any such beings; why should we trouble about them? But the opaqueness of reality is not necessarily due to the intrusion of such hypotheses. Among the things we undoubtedly come upon in this world many are obscure, not because their existence is questionable (except to a wilful skepticism), but because our apprehension of

them is external and confused. The past is obscure because removed; the inside of our bodies is obscure because complicated and hidden; a foreign language is wholly obscure if we are hearing it for the first time. Yet it would be unreasonable to suggest, on that ground, that perhaps there was no past, that there is nothing inside our bodies, or that the foreign language we are hearing does not exist or has no meaning. The existence of these things is obvious, only their nature is recondite from our point of view.

Matter is recondite in just this fashion. In the concrete it is only too perceptible: a bullet in your side, a stone wall before your face, are existences as real and as indubitable as any you could come upon. But what, precisely, *are* these obvious things? All physics and chemistry, in answering this question, only ask it again: what *is* an ion, what *is* electricity? Sophists are not wanting who even tell us that, while it is certain that material objects, like walls and bullets, exist in the gross, when you put their parts under the microscope the substance of them disappears, and they turn out to be made of nothing. What happens, presumably, is rather this: that the substance contained within the limits of those gross objects, when it plays upon our senses cumulatively and all at once, has an appreciable effect upon us; but when their substance is divided materially or analyzed logically into smaller or more abstract elements, our powers of perception and conception are soon outrun; the threads become invisible which, when woven together, made up the cloth we saw. Microscopes and ingenious analogies (used as hypotheses) may cause the horizon of our ignorance to recede indefinitely; and it is not inconceivable that in some respects, for instance in its mathematical relations, the nature of substance should ultimately be expressed by us completely. But of course matter must include a thousand concrete accompaniments, which in such a description are ignored. A military force, with so many men and guns, may be safely counted upon to overwhelm a force one tenth as strong, even though both armies contain endless personal, moral and material realities ignored in that calculation. To say that none of these ignored particulars affect the result at all, would evidently be false; to say that they all do so would be unwarranted; but we may safely assume that, under such conditions, the influence of other factors than numbers may be ignored, and that concrete events will corroborate the calculation made in abstract terms. So in physical chemistry we may safely operate with abstract terms to which no clear image corresponds in our fancy, the scale of the object being no longer the scale of our senses; but only the most shameless egotism would infer from that fact that the natural processes so expressed contain nothing but those abstract

terms. That would be as if a general, poring over his maps at headquarters, quietly informed you that, for military science, a man was simply $1/200$ of a company; that to be $1/200$ was his whole essence; and that to suppose he possessed other qualities, unknown to military science, or existed at all when his company was disbanded, was a baseless superstition. It is in this spirit, and with this truth, that idealists talk about the constituents of nature.

The obscurity, then, of such objects as matter (and psychic substance is in the same case) is merely one due to distance and complexity; it is the obscurity of crowds. Matter is corpuscular, it is immensely multitudinous, monotonous, democratic; its units (even if they are not ultimate units) are very small; its aggregates are very complex; and we, whose minds are, so to speak, cloud-minds, themselves expressions of vast moving systems, grope among the aggregates; we can not seize either the units or the laws that may bind and unbind them. Yet if our means of approach and the scale of our apprehension could be adapted to the fine texture of substance—which for practical purposes would not be helpful—there is no reason to suppose that any insuperable obscurity would be found in that substance. China or the Milky Way may seem very marvelous from a distance; nearer they might seem trivial; nearer still they might seem wonderful again, not now for their bewildering vagueness but for their calculable order. Crowds seen at close quarters may not prove very exhilarating to the heart, but they can be understood.

There is, however, another sort of obscurity in many obvious facts—or rather in all facts, at bottom—namely, indefinability. When I say that matter, seen at close quarters, might perhaps be understood, I mean that it might become perspicuous, as the furniture in a well-lighted room or the words of a clear passage are perspicuous: this perspicuity would be intuitive, not analytic or dialectical. No inspection, no analysis can ever render existence intelligible, or its movement deducible from logical necessity. All ultimate elements in what is known—including their primary relations—must be known by intuition; they are data given absolutely and unbuttressed by any reasons. Just what is most plain to sense is most puzzling to reason—if reason be unreasonable enough to expect that it should not be so; and what is intelligible to reason at one level—as Euclid is—may become arbitrary and obscure to a reason that makes fewer intuitive postulates and asks deeper questions. The elementary terms of any description must—in that description, at least—remain undescribed; we must commend them to intuition. And therefore, if we have some other method in view at

the same time, so that we can transcend our intuitions without being altogether beside ourselves, those intuitions will seem to us obscure and questionable, in spite of their intuitive clearness. What is a sound to the eye? What is an emotion to the mathematician? What is a fact to a moralist? Unintelligible, because indescribable in terms alien to each special object, and proper to a different, more familiar, intuition.

It is not merely the surds of sense that are thus puzzling in their positiveness, but also the surds of logic—the axioms, categories, Platonic ideas, relations, or laws that are employed in any particular discourse. What is similarity? What is duration? What is space? What is existence? I know that an algebraic logic can give various answers; but they seem merely to be translations of these categories into terms which may express some abstract characteristic of them, while simply dropping their specific essence. If we continue to envisage this essence or the new essences substituted for it, the question arises: What is this? We can only point and direct our attention upon it anew, saying: This is this; and I know well enough what I mean, when you don't ask me.

This sort of humorous ignorance, which supplies all the terms for our reasoned knowledge, may well satisfy us in our saner moods; and we may suspect of sophistry any witling that quarrels with it. Nevertheless, it is quite true that deduction has a less arbitrary necessity than intuition, and is more persuasive to our minds; and as our intuitions are many and heterogeneous, we are actually able to dispense with almost any one of them under pressure. The logical relations of the essence intuited are of course not in the least affected when we lose sight of it, yet the fact that it can lapse from our consciousness, and that we discover how easily a world might have existed without any such quality, very much shakes our faith in the authority of intuition.

Here a distinction is important. Any intuition gives knowledge of acquaintance with an essence, not subject to error, since the intuition chooses its object in the act of determining itself, and asserts no existence of that object. For in this case it is not the object that produces the intuition or determines its character, seeing that this object is a mere essence without existence; but, *vice versa*, the intuition, determined in its existence and quality by underlying organic processes, chooses its object, and lends it for the moment a specious actuality, as when you improvise a dream. The infallibility of intuition is therefore nothing to boast of; it subsists only because judgment is in abeyance; the datum stands for nothing else, and the experience attained is merely esthetic or contemplative. In

a practical sense, therefore, intuition is not knowledge at all, since illusion and error are intuitions also. A man might experience the whole realm of essence and know nothing of this world; he might be stark mad; indeed, when we consider that to experience all essences would mean to look on every possible world, feel every possible pain, and hear every possible opinion, madness would be nothing to his condition. His infinite acquaintance with essence would at no point yield assertive and selective knowledge of fact. In the knowledge of fact there is instinctive conviction and expectation, animal faith, as well as intuition of essences; and this faith (which is readiness to *use* some intuitive category) while it plunges us into a sea of presumption, conjecture, error, and doubt, at the same time sets up an ideal of knowledge, transitive and realistic, in comparison with which intuition of essence, for all its infallibility, is a mockery. We might almost say that sure knowledge, being immediate and intransitive, is not real knowledge, while real knowledge, being transitive and adventurous, is never sure.

Two qualifications, however, are requisite to make this assertion quite true. The first is that intuition in one sense is transitive too, since the essences it observes are independent of it, not in existence (for they do not exist) but in character and identity, since whatever is true of any essence is true of it always, whether there be intuition of it or not; so that numerically distinct intuitions may choose the same essence for their object, and be thereby united in spirit. The other qualification needed is that knowledge of fact, while never demonstrably or absolutely sure, often reaches the highest degree of practical evidence, as when we retain and regard the immediate receding past, and say: Just now this happened.

Omniscience, as religion and theology bear witness, is a genuine ideal of the mind, because when things are equally true and real, why should one be saluted and recognized rather than another? Nevertheless, the actual limitations of human knowledge are no mere imperfection, much less a disgrace; they indicate partly our special genius, partly the relative nearness and relevance of things to us in the world. If our wisdom is Socratic, if we have a humble, practical, home-keeping mind, we may even love these limitations, as we love our native language and our native type of virtue. If we consider the realm of essence in itself, for instance, there is no reason why one musical composition or one architectural design should be chosen by us rather than another and realized in act; but the choices we actually make in these matters are not arbitrary altogether: they have subjective and historical grounds, and they reveal our genius to us. Our limitations here constitute our moral preference and our self-knowledge.

If we turn to knowledge of fact, our limitations are even more significant. That one thing is perceived or believed rather than another is evidence *prima facie* that this sort of thing happens to exist in our environment. Even when our conceptions are childish or false, it is almost certain that in the direction where we affirm our object to lie there is something that, at least partially and relatively, has the character we assign to it. For in perception and belief the influences we are responding to are our intended object; whereas in the intuition of essence the only influences we are responding to (which are organic) are overlooked and are not our object at all, our attention being wholly centrifugal and our object ideal. Our own life is indeed expressed by our intuitions, but it is expressed unawares. On the other hand, in perception and belief, while our life is similarly expressed unwittingly, the external influences which are molding our life are expressed intentionally. Here our choices are prompted by external contingencies: we seek what there happens to be. That we do not find something else is therefore in itself a valuable indication concerning the facts. Of course, we may occasionally be deceived altogether: because the machinery of animal response is necessarily so intricate that it may get out of order, and a merely internal stimulus, which ought to bring intuition without belief, may start a practical reaction, and so produce illusion, or the belief that the merely imagined essence is the quality of an external object. Yet hallucination, madness, and dreams are soon cured or soon fatal; so that the normal correspondence between perception and things reestablishes itself automatically.

Is this normal correspondence direct, exact, and complete knowledge of its object? Our theory might be simpler if we could say so; but the facts forbid. Take the most favorable possible case. Suppose that somehow we have discerned the ultimate elements of our object, and fully described their movement. It is clear that this mass of science can never be present to us simultaneously, in a single intuition adequate to the whole truth; most of the details must always be in abeyance, represented vaguely by a practical assurance that, under pressure, we should be able to recall or rediscover them. But this is not all; the most exhaustive account which human science can ever give of anything does not cover all that is true about it. All the external relations and affinities of anything are truths relevant to it; but they radiate in space and time to infinity, or at least to the unknown limits of the world; and its ideal relations in the realm of essence are even more intricate. The flower in the crannied wall would not need to reveal God and man to us by any mysterious sympathetic illumination; before we could know all about it we should have had to explore for ourselves the whole universe in

which it grows. Evidently complete knowledge of anything, if we include all its natural and ideal relations, is incompatible with mortality and with the biological basis of thought.

I need hardly add that even an isolated object, shorn of its radiation in the realm of truth, is seldom if ever open to inspection through and through. The scale of material processes is far from being the scale (established by the interaction of gross living bodies) of appearances to sense and reflection; and even when the scale is the same, as when the object is psychic, such as the thought of an interlocutor, the possible adequacy of our knowledge is momentary and unverifiable. Unanimity is necessarily brief in this world; the different environments and divergent lives of the most sympathetic friends carry each of them swiftly on his solitary way. After a while, what we retain of any book or any conversation is hardly more than a few phrases, with a dubious capacity to revivify them and expand them—probably into something new. Ordinarily, of course, since psychic communication is through material symbols, even a passing unanimity is not achieved. The words we hear or read float by without kindling any intuition, other than the comfortable rumble of their conventional sequence; or if an intuition springs up, it is more characteristic of the soil than of the seed that bred it, and has only some abstract affinity with the one it is supposed to reproduce. The conditions of living knowledge, its personal seat and necessary haste, render it, so to speak, tangential to its object. The two move in different planes, and the knowledge generated at the point of contact is always somewhat inadequate, and usually immensely so. Thus the disparity between human ideas and natural things, though not absolute nor irremediable, is real and habitual.

Is the skeptic right, then, in suspecting that intelligence is condemned to defeat?

KNOWLEDGE OF EXISTENCE IS NORMALLY SYMBOLIC

Here we have reached the culminating point of our survey, from which the arguments traversed so far and the truth to be attained lie spread out before us, like opposite valleys. All this insecurity and inadequacy of living knowledge, all these obstacles which reality, according to various hypotheses regarding its nature, offers to human comprehension—all these difficulties, I say, are almost irrelevant to the real effort of the mind to know natural things. The discouragement we may feel in science does not come from failure; it comes from a false conception of what would be success. Our worst difficulties arise from the assumption that knowledge of ex-

istences ought to be literal, whereas knowledge of existences has no need, no propensity, and no fitness to be literal. It is symbolic spontaneously, and its function (by which I mean its moral function of not leaving us in the dark about the world we live in) is perfectly fulfilled if it remains symbolical. What is more evident than that religion, language, all the passions, and science itself speak in symbols; symbols which unify the diffuse processes of nature in adventitious human terms that have an entirely different aspect from the facts they stand for? In all these regions our thought works in a conventional medium, as the arts do. The theater, for all its artifices (as when a hero warbles his inmost feelings before the foot-lights) nevertheless can depict life truly and in a sense more truly than history; so too the human medium of knowledge can perform its essential synthesis and make its pertinent report all the better, when it frankly abandons the plane of its object and expresses in symbols what we need to know of it. The Greeks recognized that astronomy and history were presided over by Muses, sisters of those of tragic and comic poetry: and they felt, if they did not teach, the complementary truth: that all the Muses, even the most playful, are witnesses to the nature of things, and would do nothing well if they did not studiously express it, with the liberty and grace appropriate to their diverse genius.

The symbolic medium of transitive knowledge would hardly have been overlooked, if literal knowledge did not exist also, in a different sphere. Literal knowledge is acquaintance with essence, esthetic or logical intuition or construction, the object of which is purely ideal and, without existing in itself, is summoned into a specious actuality by the flash of attention that lights it up for a moment. This experience is delightful to us, like play; it exercises our faculties without warping them, and lets us live without responsibility. The playful and godlike mind of philosophers has always been fascinated by intuition: for philosophers—I mean the great ones—are the infant prodigies of reflection. They often take this literal knowledge of essence for their single ideal, and wish to impose it on the workaday thoughts of men. But knowledge of existence has an entirely different ideal. It is playful, too, as we have just seen; it is rapid, pregnant, humorous; it seizes things by their skirts, when they least expect it, and gives them nicknames they might be surprised to hear, such as the rainbow or the Great Bear. Yet these nicknames, like those which country people give to flowers, may very pointedly describe how things look or what they do to us. The ideas we have of things are not fair portraits: they are political caricatures made in the human interest, but very often, in their partial way, masterpieces of characterization and insight.

Consider the reason why, instead of cultivating congenial intuitions, we are drawn into the study of nature at all. It is because things, by their impact, startle us into attention and thought. Such external objects are noted and are interesting for what they do, not for what they are; and knowledge of them is significant, not for the essence it displays to intuition (beautiful as this may be), but for the events it expresses or foreshadows. It matters little, therefore, to the pertinent knowledge of reality, if the substance of objects remains recondite or unintelligible, while their total movement and operation is rightly conceived. It matters little if their very existence is vouched for only by instinctive faith and presumption, so long as this faith happens to be true and this presumption prophetic; for the function of perception and natural science is not to flatter our sense of omniscience, but to bring us presently important news of the strange world we live in. It matters little that this news is fragmentary, and rhetorically expressed, if on hearing it we are moved to the right action and gain a true view of our destiny and its momentous alternatives. All these inadequacies and imperfections are proper to perfect signs.

It is a consequence of this fact, and no paradox, that as science becomes more applicable and exactly true, it becomes more abstract and mathematical. As representative art is at its best when it is selective, when it ignores the detail of its model in order more emphatically to render its charm and its soul, so knowledge of the environment is at its best when it is frankly symbolical, is not ashamed of its technical or sensuous medium, and describes its object with discrimination, never attempting to rival it in elaboration or to slip into its place. No one would take astronomy for the stellar universe: astronomy is not at all like the stars, being human discourse; but it tells us about them truths most penetrating and certain; and in its calculations and hypotheses there need be nothing false. But if the stars are not composed of the calculations and hypotheses by which we know them, why should we expect nearer things to be composed of the sense-data which report them? A symbol has a transitive function which its object, being an ultimate fact, has not; the symbol may therefore very properly or even necessarily have a substance, status, and form different from those of its object. This diversity is not an obstacle to signification, but a condition of it. Were the representation a complete reproduction—did the statue breathe, walk, and think—it would no longer represent anything: it would be no symbol, but simply one more thing, intransitive and unmeaning, like everything not made to be interpreted.

Here, as I conceive it, is the element of truth in the theory of representative knowledge. There is certainly a vehicle in the per-

ception and conception of natural objects, a sensuous and logical vehicle quite unlike the efficacious thing; and often the symbol is the more faithful in effect, the more succinct and alien it is in quality. But there is no screen of ideas; there is no arrest of cognition upon them. The "idea" is not an object—except in those eventual sciences that study symbols for their own sake. If the term "idea" is taken passively and means an essence, the idea is the group of predicates attributed to the object; and if the term is taken actively and means a perception or thought, then it is the true or false opinion that the predicates it attributes to the object are a part or the whole of its essence. This active idea or opinion, be it observed, probably has itself *none* of the predicates it expressly attributes, whether it attributes them truly or falsely. It is the act of attributing these predicates, a judgment having a logical, moral, and historical status, but not perceptible by any of the senses. It is experienced only by being meant, and exists only by being asserted. Even the passive idea or essence, which is simply the group of predicates attributed, is at best the essence of the thing, never the thing itself; for the essence is individuated by its definition, and has only ideal and necessary relations to other essences which it may include, or resemble, or be a part of; while the thing is individuated by its place, date, and dynamic external relations—qualities incompatible with any essence or "inert idea."

The symbol, taken as a fact, has an assignable character of its own—is visual, audible, or verbal—but taken functionally it is wholly and essentially transitive. To stop at it would arrest knowledge, not analyze it; as when by a trick of apperception a printed word suddenly becomes a dead and strange phenomenon, and we wonder how its meaning came to be attached to it, and has prevented us all our lives from noticing the actual word in its uncouth individuality. The bond between the individuality of the symbol and its significance is indeed an external one, based on an instinctive or a conventional association; and it is only the *system of external relations* into which the symbols are woven that copies or reproduces the same *system of relations* in the thing signified. Knowledge of nature is a great allegory, of which action is the interpreter. Moreover, the whole system in the symbol may correspond only to an abstract element in the system of things; and if that abstract element is all that concerns us for the moment, the symbolism will be adequate nevertheless. I will not trouble the reader by illustrating this at length; let him, if he is at a loss for my meaning, think out for himself the relation between gestures and the passions they betray, between music and musical notation, between names and things, between words in one language and words of the same meaning in another.

The sensible and structural divergence between symbol and object or symbol and symbol, may be complete in these cases; yet the correspondence may be exact notwithstanding, and the function of signification and suggestion may be fulfilled perfectly.

NATURE OF THE SYMBOL

Let us not misunderstand one another: when I speak of a sign or symbol intervening in knowledge of existence, what kind of existence do I attribute to this middle term? Is it a full-fledged thing, in the same world as the object, which may conveniently be substituted for the object, when the latter is not so easily found or manipulated? Often, I answer, a sign is just that, when we are able to perceive the material instrument of knowledge and to recognize some feature in it as an index to the object. A map, for instance, represents a country-side, but it is just as truly an independent material object. There is no ontological diversity here between symbol and thing; there is only a difference of scale and elaboration, with a specific analogy of form; things which together render the smaller thing a useful symbol for the greater. I suppose in such cases there can be no denying the dualism of sign and object, and the unmistakable direction of attention and intent on the object, about which information is sought and given, even while the eye is poring upon the representation. Here, because one thing is an index of another (and nature, apart from art, is full of such correspondences) it is turned by ingenious man into a symbol of it; analogy, made use of, becomes representation. Though the two facts are materially collateral, one comes to carry our thoughts in the direction of the other, and to give us prophetic knowledge of it.

A map is an artificial instrument of information, lying outside the observer's body: it is consequently clearly distinguished by him, and the sensible essences it brings to his consciousness are predicated of the map. He is not tempted to assign the colors and printed words on the map to the country symbolized; the essences he attributes to the country, on the authority of these symbols, do not in the least resemble them; they are thought and imagined, not seen, and he is not seriously inclined to suppose that he sees them. But when the material instrument of information (for there always is one) is some living and hidden part of his own organism, on which nature is continually drawing momentary maps of her own, then the essences evoked can not be predicated of this instrument, since it is not envisaged at all in perception, as the map must be while it is being deciphered. The consequence is that in such cases the symbolic essences shining out in consciousness are asserted directly of

the object, as if a child believed that the letters and colors on the map were intrinsic features of the land and sea. This hypostasis of symbols is a sort of sensuous idolatry.

Such sensuous idolatry is constitutional in the animal mind, because its intended object is whatever external existence may be acting upon it, while its data are essences evoked by the organ of perception. Perception is thus originally true as a signal, but false as a description; and to reach a truer description of the object we must appeal to intelligence and to hypothesis, imagining and thinking what the effective import of our data may be, as in deciphering the map we must think and imagine the features of the country it represents.

The fact that the direct source of data is the organ in operation, not the object, has this further consequence, that immaterial and ineffectual things may become the objects of knowledge, only the instrument of knowledge being active and material, as is the case when we know the past, the future, or the outlying parts of human discourse, such as other men's passions.

The sign here is a gesture, a contortion of the features, or a rush of words; the object signified is an emotion and a propensity to action. To understand the sign it is by no means necessary that the passion should have been experienced by us before in our own persons; the association is not external, but physiological; it is suggestion. We do not need, in order to understand a thought expressed to us for the first time, to have already thought it, and previously associated it with just these phrases, so that the phrases may call it up. The roots which the understanding of gestures and words has in our organism are partly innate, partly acquired; they secure a determinate deviation and discharge of the processes initiated in our system by those gestures or words. But this deviation and discharge, though specific, is unprecedented. What the process of understanding reveals to us, as it culminates, is not an accomplished fact, but a possibility, a dramatic figment—the sort of feeling, the sort of intention, which the man talking to us *might* have. Our divination may at times far outrun his actual consciousness, or move in unison with it, or anticipate it (in the way that so much astonishes the superstitious); usually it will have a quite different nucleus and quality. Yet even when least sympathetic, we understand that another man's gestures and words mean *something*, that they mean, for instance, friendliness or hostility to ourselves. The vagueness of the interpretation we are satisfied with does not reduce one whit the felt expressiveness of his conduct; never for a moment do we regard him as an automaton, or a picture, or an idea in our minds.

We look in order to understand, not—unless perhaps we are painters—simply to see. We read the data of sense like a book; we know they are symbols, and we are perfectly aware that these indications leave us ill informed about the complete reality; though probably we show a healthy indifference to what the rest of the reality may be. This animal contentment in vagueness—this loose hold on sense because it is only symbolic, and on things because they are not all given in sense, this habit of shallowness—is even more prevalent when the object is material than when it is moral. Men were wise long before they were learned; their curiosity turned to poetry and religion before it turned to science. Not that they were content with the subjective or conscious of it; they were sure that their dreams were significant, and thought the dead must exist so long as they were remembered; but eager as they were to understand, they were immersed in imagination; their symbols were rhetorical and overloaded, and they took them for literal revelations.

On the other hand, in yet other instances of signification, what tends to disappear and what some are tempted to deny, is rather the sign, the object being evident. The more intelligent we are the more this happens to us, and those who overlook the medium of knowledge thereby prove how quick and ready they are to know. They read their music so well, that they think they have only heard it. But what may well be true of conscious experience, so far as self-knowledge has gone, namely, that it knows objects directly, is never true of the complete animal process of knowing. A medium, though it may be disregarded, always exists; otherwise all objects would always be known through and through and together. For this reason those who deny a medium of knowledge, if they have any speculative competence at all, have to introduce a medium of ignorance instead: nothing helps us to know, they say, but (since our knowledge is strangely limited and relative to our organs) something keeps us from knowing everything we don't know. Our eyes are blinkers; our brain is a roof, to keep the inclemencies of truth and reality from overwhelming us. This inversion is wilful, and incompatible with the facts of perception, imagination, and error; yet for the present purpose it does very well: it shows that the choice of aspects to be attended to in things is made by some perceptive organ. What qualities shall be found in or attributed to an object is a point determined by the structure of the organ, not by that of the object. The mind, in its haste, may regard the selected quality as the whole essence of the object: that will be a great though natural illusion, inevitable until the object has been approached from some other quarter as well. But to regard that sensuous quality as the object

itself would be a greater illusion, into which no animal falls, but which is reserved for skeptics. In truth these sensuous data have about the same relation to the actual object as the gods of Olympus had to the atmosphere, the heavenly bodies, and the arts of life; and it is just as easy, when our knowledge is enlarged, to dethrone them, and recognize them for poetic symbols. We may even discard some of them, but only if we keep or construct others. We can not do without symbols, because the entire and intrinsic nature of real objects is not open to apprehension nor manageable in discourse. If we take either obvious sensuous data or *minima sensibilia* to be intrinsic to the object—as the early poets took the gods to be—we shall be subject to the same illusion as they; and time will disenchant us.

An expedient to which some resort to whom transitive knowledge is a stumbling-block, is to ask if signs may not be *parts* of the things they signify, and the data of sense *parts* of the object of knowledge. A truth is no doubt approached or hinted at in this question, but it is not correctly expressed. Signs can not be parts of what they signify, nor essences parts of things. That would be like saying that the symbols VII. and 7 might be parts of the series of numbers; or various ellipses, which a round table makes to the eye when seen in perspective, might be parts of the table.

Two things, however, may be truly said instead. The first is that in some cases, unlike the above, the essence of the symbol may be a part of the essence of the object, as when initials stand for names; but this is seldom the case when the symbol is valuable, its value being due precisely to its lying in a different medium from its original; and then the common element in the two essences is probably very abstract indeed, like mere multiplicity or order. But take a case of concrete resemblance, as when the image of the table, being seen from above, reproduces the circle which is present in the table itself. Even here the specious circle (which ceases to exist if I close my eyes) is no part of the wooden table; only the essence "circle" is a part of the essence "circular table"; so that my sensuous sign is here a literal description of the table in one particular. Nevertheless, the status of this visual circle is the same existentially as that of the ellipses that would replace it, quite as usefully, at any other angle of vision. It is pictorially more adequate; as a photograph is pictorially a more adequate symbol for a man than his signature; but functionally, in the business of life, the signature may be a surer and more valuable representative; and so the ellipses may be upon occasion. In any case, even the pictorial copy, the photograph or the circular image, is an entirely discrete embodiment of that essence from its embodiment in the object—distinct from it in

place, duration, origin and substance—so that to call the symbols parts of their object is, to be quite frank, nonsense.

The second thing that may be truly said concerning the inclusion of signs in the reality signified, is this: that signs are parts of a great human segment of the universe, in which material, psychic, and ideal elements are implicated, and in which the number seven as well as the graphic signs for it, and the round table as well as the visual ellipses are to be found; and if we chose to name this whole biological and logical system after its most interesting element or nucleus, we might, at a stretch; call everything that has to do with the series of numbers a part of that series, and everything that has to do with the table a part of the table; so that only the nucleus of the table would be made of wood, while its interesting penumbra was made of air, nervous tissue, and the laws of light and of perspective; but this would be poetic license. The series of numbers and the table are not in fact composed in part of graphic symbols or of visual ellipses; they are merely expressed at times by those numerals and ovals in the language of sense or of convention.

CONCLUSION

The conclusion of our whole inquiry is that complete knowledge of natural objects can not be hoped for. We know them by intent, based on bodily reaction; we know them initially as whatever confronts us, whatever it may turn out to be. That something confronts us here, now, and from a specific quarter, is in itself important information; and the aspect it wears when we observe it more narrowly, though it may deceive us, is also a telling witness to its character. Symbols identify their objects, and show us where to look for their hidden qualities. Further symbols, catching other abstracted aspects of the object, may help us to lay a siege to it from all sides; but symbols will never enter the citadel, and if its inner core is ever to be opened to us (as it may be perfectly well) it must be through sympathetic imagination. We may, at best, intuit the essence which is actually the essence of that thing. In that case our knowledge will be as complete and accurate as knowledge can possibly be; yet since this adequate knowledge will remain transitive in intent (seeing it is not satisfied to observe the given essence passively, as a disembodied essence, but instinctively affirms it to be the essence of a thing confronting us, which our bodies are hastening to cope with) therefore this affirmation remains a claim to the end, subject to the insecurity inseparable from animal faith, and from life itself.

Such seem to me to be the varying degrees of knowability in

things natural and ideal; and if my account is complicated and eclectic, I can only say that I believe the world in which we live is far more complex and polyglot. It would be well for us, since we must be biased and fragmentary, to cultivate as many independent ways as possible of depicting the world. We need not miss all the parts, even if we miss the system. Our thoughts are not varied and plastic enough to cope with reality; yet our theories are always striving to make them more unitary and rigid. Poor indeed would human nature be, if philosophers had made it. Fortunately knowledge is of natural growth; it has roots underground, prehensile tendrils, and even flowers. It touches many miscellaneous things, some real and some imaginary, and it is a new and specific thing on its own account.

GEORGE SANTAYANA.

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REVIEWS AND ABSTRACTS OF LITERATURE

The Scientific Study of the College Student. H. D. KITSON. Psychological Review Monograph No. 98. 1916. Pp. 81.

In this monograph Dr. Kitson discusses the attempts being made at the college of commerce and administration of the University of Chicago scientifically to determine the capabilities of the students, especially in their freshman year. That such determination is desirable was recognized long ago, and is becoming increasingly evident with lapse of time. Academic "cripples," who in the past were often thought of as necessary phenomena of the curve of distribution of college grades, are not always so evaluated at present, while the claims of the better-than-average students to especial care and training are increasingly admitted. Because of these facts the college of commerce and administration, with some other colleges throughout the country, is attempting to find some scientifically accurate method of studying the individuals of the student body.

A very complete study of the school, social and personal history of the candidate for admission to the freshman class is made, and this is correlated with the results of numerous conferences with the dean of the college, with the quarterly reports of instructors, with results of medical examination, and with the results of a series of psychological tests. It is with this last that the monograph is concerned.

In making up the series of tests to be used attention was given to the degree in which procedure in administering has been standardized by other experimenters, to economy in time and effort in

administering, and to the degree in which the practise effect occurs. Those tests in which the practise effect is very evident were considered unsatisfactory.

After a survey of the tests of possible applicability there were chosen sixteen as follows: Number-checking; memory for numbers heard; memory for objects seen; memory for logical material, heard; secondary memory for same; immediate memory for logical material, seen; secondary memory for same; loss in logical material, heard; loss in logical memory, seen; opposites test; constant-increment test; hard-directions test, printed; directions test, oral; word-building test; sentence-building test; business-ingenuity test. These tests were not given in serial order, as some of them were given to groups and some to individuals, and some required the lapse of time after the administering of the test immediately preceding them in the serial order.

Forty students were tested—32 freshmen, 6 sophomores, and 2 juniors. There were 31 men and 9 women. Their average age was 19.9 years. Inasmuch as they all came from the college of commerce and administration they were to some extent a selected group. The tests were given at a uniform time of day, and always by Dr. Kitson.

It is interesting to note that no sensory tests are included in the list, but one misses more tests of kinesthesia and of motor control which, it would seem, might well have been included.

A method of numerical scoring was arranged for each test according to definite rules rigidly adhered to. The net scores of the individual students were obtained by adding the units of deviation above the average and those below the average, and subtracting the smaller from the larger number. Thus the net scores for the forty students ranged all the way from +259 to -255. The results were also graphed about an average line in terms of deviation stated in proportion of the standard deviation, for each test of each student. The individual variation of a particular student might vary from +3 S. D. to -3 S. D.

A correlation of .44 was found between the results of the tests and the university grades of the students. An estimation of the actual intelligence of the students made by the dean on the basis of all information at his command bore a correlation of .57 with the tests.

Several specific cases are given of the kind of aid which the tests afforded in the handling of certain students whose records offered difficult problems.

The final chapter is an essay on the need for, and the nature of, vocational guidance for students. Interesting figures are given from investigations of the student bodies at Chicago, Ohio Wes-

leyan, Dartmouth, Columbia, and Minnesota as to the percentage of students whose vocational choices had not been made. The number undecided is large. The discussion of vocational guidance is commendably moderate in tone, and offers several interesting ideas.

The monograph as a whole is a valuable contribution to a field which requires a huge amount of work before it is completely surveyed. It is refreshing to find accuracy and care combined with moderation in claiming results, to such an extent as is true of Dr. Kitson's work.

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JOURNALS AND NEW BOOKS

THE PHILOSOPHICAL REVIEW, January, 1918. *Consciousness and Self-Consciousness* (pp. 1-20): WILLIAM HENRY SCOTT. - Reviews and rejects the accounts of consciousness as set forth by James, McGilvary and Woodbridge. Affirms the distinction between consciousness and self-consciousness, shows how the "self" can be both subject and object and yet one undivided and indivisible self. *Pragmatism vs. Dualism* (pp. 21-38): A. K. ROGERS. - Criticizes the pragmatist's tendency to dismiss non-pragmatic views as unreal and artificial. Proceeds from the standpoint of common-sense dualism to a critical analysis of the concepts, knowledge, consciousness and experience as set forth by Dewey. Concludes that Dewey does not succeed in avoiding subjectivism and that the epistemological problem can not so easily be set aside. *Paraphysical Monism* (pp. 39-62): LEONARD THOMPSON TROLAND. - "Paraphysical monism may be regarded broadly as a purged and modernized edition of the general idealistic *Weltanschauung*." Through an empirical study of the relations between consciousness and the physiological process of response, it is claimed that the key is found for a synthetic interpretation of the results of psychology and physics which will give to the physical universe a metaphysical meaning. *Discussion: Beyond Realism and Idealism vs. Two Types of Idealism* (pp. 63-75): WILBUR M. URBAN, J. E. CREIGHTON. - A review of Professor Creighton's paper, "Two Types of Idealism," in which the claim is made that there are elements in Professor Creighton's argument which lead logically to its abandonment. A brief reply and defense by the author. *Reviews of Books*: Former Students in the Sage School of Philosophy of Cornell University, C. H. SABINE, editor, *Philosophical Essays in honor of James Edwin Creighton*: WARNER FITE.

Harold J. Laski, *Studies in the Problem of Sovereignty*, GEORGE H. SABINE. Walter T. Marvin, *The History of European Philosophy*, ELLEN BLISS TALBOT. *Notices of New Books. Summaries of Articles. Notes.*

REVUE PHILOSOPHIQUE, January, 1918. *Psychologie du langage* (pp. 1-27): H. DELACROIX. — A summary of results of the psychological study of language. *La matérialisation de l'énergie* (pp. 28-64; second and last article): L. ROUGIER. — "The discoveries of modern physics have led physicists to two very distinct conceptions of the universe. The first can be illustrated by the suggestive name of the dematerialization of matter. It consists in reducing matter to being only the place of singular points of torsion, condensation, or better, of destruction, in a *milieu* endowed with inertia and mechanical properties: the dielectric ether of Faraday and Maxwell." "In renouncing the ether we are conducted to another conception, that of the materialization of energy. . . . It appears as endowed with inertia, weight, and structure, and manifests itself under two forms: the one is called, in virtue of a long prescription, matter, the other, radiation. . . . Matter is characterized by its structure, that is to say, by the number and nature of the electrons. . . . Radiation is a form of energy which no longer appears as propagated under the form of continuous waves in a hypothetical *milieu*, but as expelled in the form of discrete unities in empty space. . . . It is endowed . . . with inertia, weight, and structure. . . . The ancient metaphysical problem of the action of the imponderable on the ponderable, of force on matter . . . disappears as a pseudo-problem." *Revue critique*. — Ch. Werner, *Études de philosophie morale*: ANDRÉ LALANDE. *Analyses et Comptes rendus*. — Edgard Milhaud, *La Société des nations*: HUBERT BOURGIN. H. L. A. Visser, *De collectieve Psyche in Recht en Staat*: G. DAVY. *Philosophical Essays in honor of James Edwin Creighton*: G. DAVY. *Revue des Périodiques. Nécrologie*: Émile Durkheim.

Hocking, William Ernest. *Human Nature and Its Remaking*. New Haven: Yale University Press. London: Henry Milford. 1918. Pp. xxvi + 434. \$3.00.

Toohey, John J. *An Elementary Handbook of Logic*. New York: Schwartz, Kirwin & Fauss. 1918. Pp. xiv + 241. \$1.25.

NOTES AND NEWS

DRS. C. E. FERREE and G. RAND presented a paper by invitation at the fifty-fourth Annual Convention of the American Ophthalmological Society, July 10, on "The Inertia of Adjustment of the Eye for Clear Seeing at Different Distances." A method and apparatus were described for testing for aviation and other vocations for which speed and accuracy of adjustment of the eye for clear seeing at different distances are prerequisites.

PROFESSOR WILMON H. SHELDON, of Dartmouth College, will teach at the College of the City of New York during the academic year, 1918-1919.

The Dial announces that it "is now established in its New York offices, at 152 West Thirteenth Street, to which all communications should hereafter be addressed. As announced in the last number, its custom of publishing one issue each in July and August will be adhered to this summer. The August number will appear on the twentieth. There will be two issues in September—the Fall Educational Number, September 5, and the Fall Announcement Number, September 19. Beginning October 3 publication will be weekly."

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

CONSCIOUSNESS AS BEHAVIOR

IN a recent issue of this JOURNAL¹ Dr. Henry Rutgers Marshall has stated very clearly and pointedly certain objections to the view that consciousness is to be interpreted as a form of behavior. Dr. Marshall argues, in substance, that a study of behavior leads normally to sciences like neurology and biochemistry, but not to the "something more" that we call consciousness. We may hold, indeed, that a certain special type of behavior is correlated with consciousness, but when we do so we no longer confine ourselves to the facts of behavior pure and simple. The belief of the observer that this behavior is connected with consciousness is "a matter of inference, and not of objective observation; and it is an inference which involves the metaphysical assumption that certain forms of behavior always have corresponding with them certain changes in consciousness such as he notes in his own experience" (p. 259). The view that consciousness is behavior which is guided by future results is obviously only a special form of the doctrine which Dr. Marshall opposes, and so falls under the same condemnation. If consciousness can not be reached except with the aid of a metaphysical assumption, the case is closed. It can not then be reached "as the result of purely objective observation of the type employed by the behaviorists and other biological students; although Dr. Bode's treatment seems to imply that it can" (p. 261). To identify consciousness with a form of behavior is "as though, having found that a definite form of crystal refracts light in a certain way, one should say that this particular kind of refraction is the definite form of the crystal."

The objection is plausible, and it derives additional weight from Dr. Marshall's eminence in the field of science. Certain parts of his criticism, which are directed more particularly against Professor Watson, need not concern us at present, since Professor Watson is entirely capable of hoeing his own row. My purpose is to comment on Dr. Marshall's objections in connection with the view that con-

¹ Vol. XV., No. 10, p. 258.

sciousness is behavior that is controlled by the future. If I interpret him correctly, he is of the opinion that the "purely objective observation" of our fellowmen would reveal nothing that calls for the use of categories other than those which are used in the physical sciences. We should presumably see them merely as wondrous mechanical contrivances of the sort suggested by James's genial fiction of the "automatic sweetheart," so complete in its verisimilitude as to be "absolutely indistinguishable from a spiritually animated maiden, laughing, talking, blushing, nursing us, and performing all feminine offices as tactfully and sweetly as if a soul were in her."²

This illustration of the automatic sweetheart seems to embody quite tangibly the issue raised by Dr. Marshall. A behaviorist who takes his doctrine seriously could doubtless be quite happy with a sweetheart of this sort. But Dr. Marshall would insist, with James's approval, that something highly important was lacking, as would any average person whose appreciations were not stultified by the preconceptions of behaviorism. If such a person should peradventure find himself in the possession of two sweethearts, one being a "spiritually animated maiden" and the other the automatic sweetheart of James's exuberant imagination, he would value the two very differently. It is true that both of them would perform the same offices tactfully and sweetly, as is the manner of sweethearts. Yet in the one case the service would be prompted by solicitude for the comfort and happiness of the beloved, while in the other case the behavior would be merely an indication that this thing of joints and muscles and neurones had been set in motion by a molecular vibration in the nervous system. It would wear its heart on its sleeve, so to speak; the recipient of its ministrations would have full assurance that his sweetheart's witticisms or petulance had no more hidden meaning than the behavior of a phonograph or a cuckoo clock. With the other fair charmer everything would be different. He would be obliged to rely on inference, and his footing would be much less secure. In the one case he would be confronted with problems of mechanics, in the other with problems of diplomacy. It is admitted, of course, that the mechanical problems might have any degree of complexity. Dr. Marshall would doubtless be ready to admit that in the presence of a being so uncertain, coy, and hard to please even his intellectual resources would be painfully inadequate. Yet the fact remains that, in principle, the automatic sweetheart could be understood and explained in mechanical terms as exhaustively as a lemon-squeezer or a cider-press; whereas the other sweetheart would make it necessary to have recourse to a "metaphysical assumption."

² *The Meaning of Truth*, p. 189, note.

And while we might marvel at the perfection of a mechanical device that could serve us so acceptably, our deeper emotions would be left untouched, for, as James says, "the outward treatment is valued mainly as an expression, as a manifestation, of the accompanying consciousness."

Yet the behaviorist is constrained to disagree. He finds it difficult to believe that our hero would keep himself constantly reminded that one of his sweethearts ministers to his wants merely *as if* prompted by a concern for his well-being, whereas the other is motivated by a concern that is not simulated but real. Since the outward acts would be the same, this distinction would make it necessary to maintain an attitude of meditation not wholly in keeping with the spirit of courtship, to say nothing of the masculine tendency towards the view that all women are alike. Moreover, if he could be induced to reflect on the nature of the distinction, his reward in all likelihood would be, not a heightened appreciation of its significance, but rather much weariness and vexation of spirit. Since the outward acts are alike, what real ground is there for attributing the conduct of the one to motives and purposes, and that of the other to soulless mechanism? If the acts of the latter are entirely explicable on the basis of mechanism, the same must be true of the other, unless we assume that there is a difference between them which is open to purely objective observation. If there is no difference, then the consciousness of the spiritually animated maiden plainly makes no difference in the behavior; it is a mere concomitant or epiphenomenon. Diplomacy, in that case, is as much out of place with the one as with the other; mechanism becomes the last word of explanation, and the mystery of the eternally feminine takes on much the same quality as the mystery of higher mathematics. Or he might approach the matter from the opposite side and inquire into the reasons why the automatic sweetheart should be denied the attribute of consciousness. Her powers of adaptation are admittedly unique. She is clearly capable of utilizing the results of previous happenings in such a way as to bring about the recurrence or the avoidance of these results, according to the needs of adaptation. What else can be the meaning of her reminder to him that the front steps are covered with ice, or that he had better consult a physician about his cough? The purposive relationship, or control by future results, is suggested at least as directly by observation as is the relationship of the magnetic needle to its pole or the gravitational relationship of the moon to the earth. Yet these latter cases are not supposed to warrant an inference to something occult and metaphysical called "magnetism" or "gravitation." Nor would there be much "sense" in the supposition of a needle that behaved in every ascertainable respect like a

magnetic needle, the only difference being that it had nothing to do with magnetism. To behave in that way is to be a magnetic needle. Is there any antecedent necessity why a purposive relationship, control by the future, should occupy a radically different status from the relationship of magnetism or gravitation?

The plausibility of Dr. Marshall's contention is the result, as I venture to think, of an underlying assumption regarding the relation of observation to hypotheses or interpretation. As Dr. Marshall presents the matter, observation does its work in entire independence of interpretation. We take note of what the body does; and after the facts have thus been secured, the inference to a correlated consciousness is foisted upon them. This is the meaning, I take it, of the statement that the existence of consciousness is "a matter of inference and not of objective observation." The facts are, of course, in no position to protect themselves against this treatment, but they are relieved of all responsibility in the matter by the declaration that the inference rests altogether on a "metaphysical assumption." But if we proceed in this way, we are playing with fire. Why not say in precisely analogous fashion that purely objective observation presents us with a moving outline of dingy white, which, by virtue of metaphysical license, we then interpret as a baseball that is propelled by the force imparted to it from the impact of the bat? In fact we do not first observe and then supply a context, but we observe by seeing things as existing in a certain context. Or, if the statement be preferred, the inferences of earlier situations are the flesh and bone of our present observations. In so far as inference is uncertain, the observation is likewise uncertain. The man who suspects that his sweetheart is out of temper is not indulging in a passion for metaphysics; he is making use of his misgivings as a guide to observation. And similarly the tendency of primitive man to interpret all sorts of occurrences as acts that are done "on purpose" for his weal or woe is not due to an innate fondness for the metaphysics of consciousness, but rather to his poverty of resources in the matter of interpretation. The observation of purposive behavior is the same in kind as any other observation, and is subject to correction by the discovery of facts that suggest alternative explanations, such as gravity, magnetism, reflex action or instinct.

If this be a defensible position, it follows that inquiries into the existence of consciousness must rely on methods of investigation such as are embodied in the procedure of comparative psychology. They do not depend upon neurology or biochemistry, which Dr. Marshall takes as representative of purely objective observation in this field, because these subjects address themselves to other problems, although it is true that their results may lend themselves to a variety of ap-

plications. When the observer construes certain of these results as characteristic of conscious behavior, he is not just supplementing gratuitously a set of facts that are already complete and self-sufficient, but is attempting to interpret these facts in their relation to other facts, *viz.*, the ends that are achieved by conscious behavior. So long as this state of affairs is overlooked, consciousness is able to maintain itself in a state of metaphysical isolation, and the attempts to reduce it to a form of behavior become just the oddities of persons who "glory in their logical shame." But the traditional conception of consciousness has proved its egregious unfitness on so many occasions that it is scarcely in a position to be disdainful of a humbler rival, who fraternizes with science and who can claim no lineage that entitles it to the protection of metaphysics.

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NON-ARISTOTELIAN LOGIC

THE preeminent advantage of the set of categorical forms selected by Aristotle for the construction of his logic is this, that, corresponding to each member of the set, there exists a single other member of the set, which stands for its contradictory.¹ This property is expressed by the following implications,

$$\begin{aligned} A(ab) O(ab) \angle o, \quad i \angle A(ab) + O(ab), \\ E(ab) I(ab) \angle o, \quad i \angle E(ab) + I(ab). \end{aligned}$$

These propositions are fundamental in the classical system, but the two to the left do not remain true when the terms are allowed to assume the special meaning *zero* and *one*, for they become,

$$(a=o, b=i), \quad A(oi) O(oi) \angle o, \quad E(oi) I(oi) \angle o.$$

The two forms here conjoined are, in each instance, true propositions, and can not, therefore, taken together, imply an impossibility.

¹ Such symbols as we shall have to employ are already in common use. We shall represent the four forms of the ordinary logic by $A(ab)$, $E(ab)$, $I(ab)$, and $O(ab)$, the small a in the bracket standing for subject, the small b for predicate. The *null*-class and the *null*-proposition will be represented by o (zero), the *one*-class and the *one*-proposition by i (one), and we shall from time to time replace the a and b by these special symbols. In every case it will be clear from the position of the symbol, whether class or proposition is meant.

For the hypothetical relation, *if, then* (*implies*), we shall employ the symbol, \angle . The conjunctive relation, *and*, we shall indicate by the multiplication sign, which, understood in every product, is usually not expressed. The disjunctive relation, *either, or*, will be represented by the addition sign.

In those instances in which it will be necessary to indicate that a given proposition is false, we shall place a prime (') to the right.

The common logic seems to break down, accordingly, when the terms are allowed to take on these limiting values.

If we turn to the syllogism, the same breakdown that appears in connection with the implications just given, will manifest itself again. Thus the valid mood,

$$A(ab) O(cb) \angle O(ca),$$

becomes for $a=c$,

$$A(ab) O(ab) \angle O(aa),$$

and this, if we assume as is commonly done, that

$$O(aa) \angle o,$$

since implication is a transitive relation,

$$A(ab) O(ab) \angle o,$$

which is the implication that has already been shown to be invalid.

If the subject and predicate of the conclusion be identified in each one of the valid moods of the syllogism which have a negative conclusion, then it will follow, just as above, that each one of these moods is invalid. It was this result which was pointed to in the past as invalidating the common logic. It is our purpose to show in just what sense this view was a misunderstanding and the manner in which this apparent bankruptcy of the ancient scheme of inference may be remedied.

We observe, in the first place, that the implication,

$$O(aa) \angle o,$$

is not forced on us in any way in virtue of

$$i \angle O(oa),$$

for it can be shown that this latter assumption, while it does violence to current logical orthodoxy, is permissible, since there is nothing in the definition of the null-class that can prevent one postulating it.

Under this condition, *viz.*,

$$\{O(aa) \angle o\}',$$

which is implied by the additional result,

$$\{E(aa) \angle o\}',$$

all of the twenty-four moods of the syllogism, which are commonly recognized as valid, remain valid, but the characteristic property of the Aristotelian system (mentioned in the first paragraph) will not have been restored by this device. In order to retain that advantage, we should have to assume

$$O(oi) \angle o,$$

from which it follows that

$$E(oi) \angle o,$$

and the possibility of doing this can be established as before, by demonstrating that there is nothing in the definition of the null-class to prevent our assuming them to hold true.

Such a logic, whose characteristic postulates would be the two just written down, is only one member of a family of logics, whose existence I shall point out later on. It might appropriately be called *semi-Aristotelian*, because exactly the same implications, which are true in the common logic, hold here, and conversely. The classical logic is identical with it, except that the range of application in the former case is commonly restricted so as to exclude *nothing* and *universe* as possible meanings of the terms.

The importance of this result lies not so much in the fact that the old logic is exonerated of the charge that has been made against it in the past, that its hypotheses are impotent to interpret the new meanings which have been introduced into the science since its inception, as in the fact that a new and more general system of inference has been pointed out.

In order to establish the existence of other systems of inference, it will be convenient to employ a set of categorical forms, whose relation to the traditional ones is given by the following equations:

$$\begin{aligned} A(ab) &= \alpha(ab) + \gamma(ab), \\ E(ab) &= \epsilon(ab), \\ I(ab) &= \alpha(ab) + \beta(ab) + \gamma(ab) + \gamma(ba), \\ O(ab) &= \epsilon(ab) + \beta(ab) + \gamma(ba). \end{aligned}$$

Their verbal interpretation is

$$\begin{aligned} \alpha(ab) &= \text{all } a \text{ is all } b, \\ \beta(ab) &= \text{some } a \text{ is some } b, \\ \gamma(ab) &= \text{all } a \text{ is some } b, \\ \epsilon(ab) &= \text{no } a \text{ is } b, \end{aligned}$$

the word *some*, which is explicit in β and γ , being understood to mean *some at least, not all*.

If our universe of application be that one presupposed in the Aristotelian system (*i. e.*, if the terms can not take on the meanings zero and one), it will in turn be possible to express α , β , γ , and ϵ in the members of the set, A , E , I , O . Thus,

$$\begin{aligned} \alpha(ab) &= A(ab) A(ba), \\ \beta(ab) &= I(ab) O(ab) O(ba), \\ \gamma(ab) &= A(ab) O(ba), \\ \epsilon(ab) &= E(ab). \end{aligned}$$

These are obtained by multiplying out the sums just given, assuming

that the subject and predicate of α , β , and ϵ are simply convertible, and by applying the following implications,

$$\begin{aligned}\alpha(ab) \beta(ab) \angle o, & \quad \beta(ab) \gamma(ab) \angle o, \\ \alpha(ab) \gamma(ab) \angle o, & \quad \beta(ab) \epsilon(ab) \angle o, \\ \alpha(ab) \epsilon(ab) \angle o, & \quad \gamma(ab) \epsilon(ab) \angle o, \\ & \quad \gamma(ab) \gamma(ba) \angle o.\end{aligned}$$

The latter results are in accord with those of the common logic and with those of the more general logic, which we have already discussed, but no longer hold under the special conditions, which are set down later on. We may indicate in passing, that the implications just given then become,

$$\begin{aligned}\alpha(ab) \beta(ab) \angle o, & \quad \{\beta(ab) \gamma(ab) \angle o\}', \\ \alpha(ab) \gamma(ab) \angle o, & \quad \beta(ab) \epsilon(ab) \angle o, \\ \alpha(ab) \epsilon(ab) \angle o, & \quad \{\gamma(ab) \epsilon(ab) \angle o\}', \\ & \quad \{\gamma(ab) \gamma(ba) \angle o\}'.\end{aligned}$$

Our task is now to discover what limitations are imposed upon us by the definition of the null-class.² This definition is given by the following implications:

$$\text{I.} \quad \alpha(io) + \gamma(io) \angle o, \quad \alpha'(oi) \gamma'(oi) \angle o,$$

and its immediate consequences are:

$$\begin{aligned}\alpha(oi) \angle o, & \quad \gamma'(oi) \angle o, \\ \alpha(io) \angle o, & \quad \gamma(io) \angle o.\end{aligned}$$

A further restriction, which follows from the definition and has therefore to be taken into account, is $\alpha'(aa) \gamma'(aa) \angle o$,³ or in particular,

$$\text{II.} \quad \alpha'(oo) \gamma'(oo) \angle o, \quad \alpha'(ii) \gamma'(ii) \angle o.$$

Our results, which may be summarized as,

² The null-class is defined as the class which is the *contrary* of itself; i. e., if b and non- b are two species, which complete the genus, but which have no object in common, and if further a is a species of non- b , then a is a class contrary to b . The null-class is, then, the class which uniquely satisfies this condition when a and b have been identified.

Employing the usual notation, we should write:

$$\begin{aligned}o \angle i &= o \text{ is included in } i \text{ is true,} \\ (i \angle o)' &= i \text{ is included in } o \text{ is false.}\end{aligned}$$

The first condition implies and is implied by and is hence equivalent to Schröder's *Nullpostulat*. The second is identical with his so-called *Existenzpostulat*. It will be readily seen that the definition which we have given is only another manner of expressing the same thing.

³ It might, not unnaturally, be supposed that the import of $a \angle a$ would be the same as that of the proposition, all a is all a . But that $\alpha(aa)$ may even be untrue for all meanings of a without making it untrue that $a \angle a$ is easily seen from the form of the implication, $\alpha'(aa) \gamma'(aa) \angle o$.

- (a) $\gamma(o\dot{i})$ is a true proposition,
- (b) $\alpha(o\dot{i})$, $\alpha(i\dot{o})$ and $\gamma(i\dot{o})$ are false propositions,
- (c) either $\alpha(o\dot{o})$ or $\gamma(o\dot{o})$ is a true proposition,
- (d) either $\alpha(i\dot{i})$ or $\gamma(i\dot{i})$ is a true proposition,

leave undetermined the truth or falsity of β and ϵ , when subject and predicate are allowed to take on the meanings *zero* and *one* in every possible way, and this rather wide range of choice will evidently enable us to construct a number of systems of inference, the characteristic postulates of which may stand in contradiction to one another. In order to determine unambiguously a single one of these systems it will be natural, by introducing a series of postulates, to remove one possibility after another, until no choice among alternatives remains. These postulates, "self-evident" when the values zero and one are excluded, will then be assumed to hold true in the limiting case. As our illustration of method, we shall determine the system, which appears the most paradoxical to "common sense," the one, namely, which asserts the untruth of the proposition, *all a is all a*, for all meanings of *a*.⁴

We shall assume in the first place that $\alpha(ab)$, $\gamma(ab)$, and the product, $\beta'(ab) \epsilon'(ab)$, are convertible by *contraposition*, i. e., denoting non-*a* by *a'*,

$$(1) \quad \begin{aligned} \beta'(ab) \epsilon'(ab) &\angle \beta'(b'a') \epsilon'(b'a'), \\ \alpha(ab) &\angle \alpha(b'a'), \\ \gamma(ab) &\angle \gamma(b'a'). \end{aligned}$$

Our other postulates will be:

$$(2) \quad \alpha(ab) \angle \alpha'(ab') \gamma'(ab'),$$

which yields $\alpha(o\dot{o}) \angle o$, for $a=b=o$, by I. Consequently,

$\gamma'(o\dot{o}) \angle o$, by II.; $\alpha(i\dot{i}) \angle o$, by (1); $\gamma'(i\dot{i}) \angle o$, by II or (1);

$$(3) \quad \beta(ab) \angle \alpha'(ab') \gamma'(ab'),$$

which yields $\beta(o\dot{o}) \angle o$, for $a=b=o$, by I; and

$$\beta(o\dot{i}) \angle o, \beta(i\dot{o}) \angle o, \text{ for } a=o, b=i, \text{ by II;}$$

$$(4) \quad \epsilon'(ab) \angle \alpha'(ab') \gamma'(ab'),$$

which yields $\epsilon'(o\dot{o}) \angle o$, for $a=b=o$, by I; and

$$\epsilon'(o\dot{i}) \angle o, \epsilon'(i\dot{o}) \angle o, \text{ for } a=i, b=o, \text{ by II;}$$

$$(5) \quad \alpha'(ab') \gamma'(ab') \angle \epsilon'(ab),$$

which yields $\epsilon(i\dot{i}) \angle o$, for $a=b=i$, by I.

⁴ It will be necessary to add to what follows, viz., $\gamma'(o\dot{o}) \angle o$, $\gamma'(i\dot{i}) \angle o$, the more general postulate, $\gamma'(aa) \angle o$. Without this postulate it still remains unsettled, whether we intend to deny the truth of *all a is all a*, or to assert its untruth for *all meanings of a*.

The only case which remains unsettled is that of $\beta(ii)$, and it may now be seen from the first member of (1) that $\beta'(ii) \angle o$. For convenience of reference we may now summarize our results:⁵

$$\begin{array}{llll} \alpha(oo) \angle o, & \alpha(oi) \angle o, & \alpha(io) \angle o, & \alpha(ii) \angle o, \\ \beta(oo) \angle o, & \beta(oi) \angle o, & \beta(io) \angle o, & \beta'(ii) \angle o, \\ \gamma'(oo) \angle o, & \gamma'(oi) \angle o, & \gamma(io) \angle o, & \gamma'(ii) \angle o, \\ \epsilon'(oo) \angle o, & \epsilon'(oi) \angle o, & \epsilon'(io) \angle o, & \epsilon(ii) \angle o. \end{array}$$

Let me in concluding add a word of reply in advance to those critics whose habit of thought will be sure to lead them to a misunderstanding of the possibilities that have just been pointed out. If two systems of inference contradict one another, they will say, then, if one be true, the other must be false. To this one must agree, but one might add that it may very well be meaningless to assert that either one is unconditionally true. The characteristic axiom of Riemannian space contradicts that of Euclidean space, but the "space of our experience" illustrates the one geometry quite as much as it illustrates the other. Two contradictory hypotheses can not both be true, because this is part of the meaning of their being contradictory, but each may well enough be applicable to one and the self-same world. Surely pragmatic philosophy is directly served, whenever we can show that the world is plastic enough to illustrate two hypotheses indifferently, even when these two stand in direct contradiction to one another.

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SOCIETIES

AMERICAN PHILOSOPHICAL ASSOCIATION: PRELIMINARY MEETING OF LEADERS OF THE DISCUSSION ON MECHANISM VERSUS VITALISM

MEMBERS of the Philosophical Association are aware that at the Princeton meeting last December a new scheme was adopted for organizing pre-arranged discussions. The incoming Executive Committee was instructed to put the scheme into operation for the

⁵ In the particular logic, whose foundations have just been set down, it will be found that the ordinary syllogism, $xy \angle z$, contains twenty-one valid moods; that $xy' \angle z'$ and $x'y \angle z'$ contain twenty-three and nineteen respectively, and that $xy \angle z'$ contains one hundred and fourteen. It will be found too that no other valid syllogistic variations exist except those just enumerated. The forms of inference built up out of α, β, γ and ϵ , which correspond to those of the common logic, have been fully treated in the writer's *Primer of Logic* (B. D. Smith and Bros., Pulaski, Va., 1917). A reference to that work will suggest the manner of working out the alternative systems proposed in this article.

meeting next December, and invited me to act as organizer of the leaders of the discussion. In consultation with our president (Professor Mary Whiton Calkins) and, through her, with the other members of the Committee, *Mechanism vs. Vitalism* was fixed on as the most promising topic for debate, and the following were chosen to form the group of leaders, *viz.*, Professor L. J. Henderson (Harvard University), representing Physics and Chemistry; Professor H. S. Jennings (Johns Hopkins University), representing Biology; Professor H. Warren (Princeton University), representing Psychology; and Professor W. T. Marvin (Rutgers College), representing, together with myself, Philosophy. It was thought desirable to invite the cooperation of three scientists, in order to have the different angles of approach to our problem represented as competently as possible. The thanks of the association are due to Professors Henderson, Jennings, and Warren, for their willingness to desert for this occasion the meetings of their own associations, and for their most helpful and loyal cooperation.

The preliminary meeting of leaders, called for by the new scheme, was held at Harvard University on June the twenty-first and twenty-second, between five and six hours on each of these two days being devoted to planning the general scope of the discussion and outlining the arguments which each leader will attempt to present at the discussion itself. A selected list of books and articles bearing on our topic will be published by us in the JOURNAL early in September. We have also agreed to submit our papers, in their final form, for publication during the fall, so that they may be in the hands of members of the association prior to the meeting. The drift of the discussion at our preliminary meeting made it appear desirable to frame our individual arguments on a common *basis of reference*. This basis of reference, which is submitted herewith to members of the association, together with brief abstracts of the proposed arguments of the leaders, attempts to exhibit the place of "mechanistic" concepts in the existing system of the Natural Sciences, and thus to define the general theoretical context within which the problem of the nature and status of "life," or rather of living beings, arises, and to which all attempts at a solution must be relevant. It should, however, be clearly understood that *this statement is strictly nothing but a basis of reference upon which our arguments can converge*. It is not put forward dogmatically, or even with complete unanimity, as a common doctrinal platform. On the contrary, although this statement was exhaustively discussed and its language shaped by all of us, we agreed that no one of us should be held committed to every detail of assertion that it contains, or every implication that ingen-

ious critics may read into its phrases. Indeed, there was nothing, perhaps, more clearly brought home to us than the difficulty of condensing into a brief statement this general background of our argument, so as to suggest nothing but the interpretations supplied by the context of our actual discussions, and in that context found acceptable with individual qualifications and reservations here and there. Hence each leader was left free to define, so far as he may think fit to do so, in his individual contribution, how far he accepts, or differs from, this basis of reference, and how his arguments bear upon it.

In general, I think, we all felt that this first part of the new scheme was an unqualified success. At least we were unanimous on having thoroughly enjoyed our discussion.

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BASIS OF REFERENCE

What follows attempts to be an objective statement of the present condition of science, bearing on the problem of Mechanism and Vitalism:

1. A geometrical description of the universe has been found applicable, without measurable imperfection, to all parts of the universe in so far as they occupy space. All material objects, all living bodies, are geometrical.

2. A kinematical description of the universe also has been found applicable, without measurable imperfection, to all parts of the universe which occupy space. This description involves time and motion as well as space. All material objects, all living bodies, are kinematic.

3. A mechanical description, involving the further concept of mass, also has been found applicable, without measurable imperfection, at least to all large masses. All large material objects, all large living bodies, are mechanical.

4. A physico-chemical description, involving such concepts as chemical composition, differentiation into phases, concentration, and every kind of potential, also has been found applicable, without measurable imperfection, in the preliminary survey of all molecular systems. All living bodies are molecular systems, or, in other words, are physico-chemical.

5. A description in geometrical, kinematical, mechanical, and physico-chemical terms may be called a *mechanistic* description.

6. The evidence in favor of the complete validity of the mechanistic description consists in its continuous development without any check, and in the fact that all quantitative measurements are consistent with such a description.

7. The discrimination of living bodies from other physico-chem-

ical systems rests upon certain common characteristics of the former class of systems. These characteristics are probably best described by the words organization and regulation.¹ It is true, however, that regulation, and perhaps also organization, can occur elsewhere. Living organisms may also be characterized by assigning the words function and teleology to their behavior or their constitution. They are, nevertheless, mechanistic through and through because they are physico-chemical systems, manifesting mechanical phenomena, kinematical phenomena, and geometrical characteristics.

8. The ascending scale from geometry to physical chemistry and on through the organic to what Spencer calls the super-organic is not to be regarded as a classification which has been worked out with complete success. Nevertheless, the several sciences involved include all the known kinds of natural phenomena, at least below the level of the organic, and perhaps below the level of mind. Moreover, the whole experience of science shows that these several departments of science are strictly additive and cumulative. The kinematical is the geometrical plus something else. The mechanical is the kinematical plus something else, and so on. There is much room for difference of opinion whether these successive increments are homogeneous or heterogeneous. But this is probably a matter of definition or of scale. What is important is the vast induction that they involve only addition.

ABSTRACT OF PAPER BY PROFESSOR HENDERSON

A decision between mechanism and vitalism, regarded as mutually exclusive interpretations of living things, is not at present possible. On the one hand it may be truly said that mechanism has never been proved wrong and gains ground steadily. But the reply to this is that the very types of phenomena, *e. g.*, those possessing singularities of various kinds, catalytic actions, *etc.*, which to the physical scientist appear to be the only conceivable sphere for true *vitalism*, are not yet well investigated. Scientifically, therefore, the evidence for mechanism amounts to a strong probability, weakened by the fact that some of the important cases have not been settled.

Logically, I incline to the opinion that all statements of strictly anti-mechanistic vitalism are meaningless. Especially am I convinced that such views as those of Boussinesq, Charles Peirce, J. S. Haldane and others, which seek to add something heterogeneous to mechanism, or to abandon it by rising to a higher level, in effect destroy our only means of thinking about physical phenomena.

Upon the other hand, I agree with Haldane that it is hardly pos-

¹ The addition of growth, reproduction, nutrition was suggested by one member.

sible to overemphasize the importance of organization as a qualification of all bio-physics and bio-chemistry.

ABSTRACT OF PAPER BY PROFESSOR H. S. JENNINGS

(A discussion of the practise and progress of biological science in relation to the above formulation of the status of general science as bearing on the problems of mechanism and vitalism.)

The relatively incomplete formulations given by biological science at its present stage of development would yield, taken by themselves, only fragments of the various kinds of scientific description set forth as existent, in the general statement. Therefore the discussion centers about those underlying relations in the perceptual phenomena which make scientific formulation possible. These relations may be characterized as the prevalence of *experimental determinism*; they lie in the fact that all perceptual phenomena are so interconnected that when one is experimentally altered, certain others are likewise altered. Temporally these relations manifest themselves in the fact that all later perceptual diversities in systems are experimentally determined by earlier perceptual diversities in the systems. The correspondences of diversities are found to fall into a system which constitutes the various types of scientific "descriptions" set forth in the general statement.

The progress of examination indicates that such experimental determinism holds rigorously throughout the living. No case is known of perceptual diversity that is not experimentally determined by a preceding perceptual diversity. In opposition to theories of vitalism that maintain experimental indeterminism (Driesch), this applies notably to regulatory processes in development; to adaptive or purposive actions in general; and to the diversities in the phenomena commonly called "states of consciousness." Experimentally, the latter are bound up with objectively perceptual diversities, preceding and succeeding, as are other phenomena.

These relationships make possible in the science of the living the same general type of formulation as in the science of the non-living. They leave no place for non-perceptual determiners of perceptual events, save as assumed accompaniments to the perceptual determiners.

But the conditions in biology do not imply the deducibility of all biological phenomena from any general proposition or set of such; do not imply that biological phenomena are theoretically predictable from a complete knowledge of any part, or the whole, of the non-living. They do not imply even that the motions and configurations of the living are essentially predictable from a knowledge of the mo-

tions and configurations and their laws of change in the non-living. So far as biological experimentation goes it is possible that the laws of motion drawn from a study of the non-living are not complete, but require essential additions from the study of the living. In particular it is not impossible that special laws become manifest when there is "consciousness" in its various types. This involves no breach of objective experimental determinism, the diversities of consciousness being conditioned by diversities in objective perceptual conditions (configurations not found in the non-living).

It is consistent with the complete experimental formulation of biological science that types of phenomena should occur in the living that do not occur in the non-living (the production of asymmetrical crystals?; the occurrence of objects combining typical forms with changing chemical constitution?; non-obedience to the second law of thermodynamics?; the occurrence of consciousness?, *etc.*) All these are questions of fact, not altering the general type of formulation of the science, in accordance with experimental determinism.

ABSTRACT OF PAPER BY PROFESSOR H. C. WARREN

1. Professor Henderson's formulation is thoroughly acceptable to me, with the exception of Article VII., which seems in certain respects inadequate or at least not sufficiently explicit. I would restate this article as follows:

VII. The discrimination of living bodies from other physico-chemical systems rests upon certain common characteristics of the former class of systems. These characteristics are probably best described by the terms *organization*, *nutrition*, *growth*, *regulation*, *repair*, and *reproduction*. It is true that each of these characteristics may occur elsewhere. Their combination, however, which results in the maintenance of individuals for a long period, and of the class of living systems for an indefinitely long epoch, may at present be regarded as the specific characteristic of living bodies. Living bodies may also be characterized by assigning the adjectives *functional*, *responsive*, *retentive*, and *anticipatory* to their behavior or to their constitution. They are nevertheless mechanistic through and through, because they are physico-chemical systems, manifesting mechanical phenomena, kinetical phenomena, and geometrical characteristics.

2. It should be noted that the antithesis between mechanism and vitalism is really not complete: (a) One might accept the notion of mechanism as defined in these articles and at the same time describe the phenomena of living bodies in terms of a specific *vital force*—that is, a specific mode of activity different from physico-chemical activity. According to this view a living body is a *vital mechanism*, belonging to a higher additive level than physico-chemical mechanism.

(b) On the other hand, if the behavior of living bodies is conceived to be in any respect indeterminate (or determined by an entelechy, psyche, or other agent distinct from the activity itself),

this class of systems falls outside the sphere of mechanism. But the same is true of non-living bodies also. According to the ancients not only vital phenomena, but many physical and chemical phenomena also, are non-mechanistic.

3. One line of argument often used in support of vital indeterminism or entelechism is based upon the analogy of human consciousness and volition, which are assumed to be autonomous and non-mechanistic. Accordingly my paper will examine the nature of those human activities which are generally designated as *conscious* and *voluntary*, with special reference to their supposed indeterminateness.

The standpoint of the paper is that according to the weight of present evidence (1) *all human activity, including deliberation and selective volition, is completely mechanistic*; and (2) *this mechanism is physico-chemical in type*. While certain phases of human activity are found to be far more intricate than any other known physico-chemical mechanism, this is due to the tremendous complexity of the phenomena, not to their novelty. Psychology, thus interpreted, affords no support to vitalism or to indeterminism.

4. Living bodies (organisms), whether regarded as conscious or not, (a) are able to act upon data from *past* and *future*, and upon data from *afar*, as well as upon present, contiguous data. Moreover, (b) their responses to stimuli tend in general to be *suitable*, or *fit*. Taking into account these two characteristics, the behavior and structure of organisms may be called *teleological*.

The paper will maintain that according to present evidence (3) *the teleological character of organisms is completely mechanistic and physico-chemical*. There is at present no adequate ground for assuming the activity of a specific vital force or entelechy, or for assuming any indeterminateness in the growth activities or behavior activities of organisms.

ABSTRACT OF PAPER BY PROFESSOR W. T. MARVIN

The issue between physico-chemical mechanism and vitalism is not one of facts (phenomena, or observed data), but of theories (or explanations). It is essentially philosophical and is part of a more general philosophical issue. On the one hand is the philosophy of modern science going back at least to Galileo, on the other hand is romanticism.

The former is manifested in the following scientific attitudes, or prejudices.

1. Though several (or even many) independent postulates form the basis of science and though many indefinable notions form the

basis of definition of the remaining concepts of science, still these all should be reduced to a minimum. These postulates and notions are mathematical, physical, and chemical, and perhaps the last may be reduced to the physical. In these postulates we have the sufficient conditions for the remainder of science and in this sense science is logically continuous.

2. Second is the prejudice of determinism. All facts have their sufficient conditions, that is to say, can be explained. Diverse events, properties, or effects always presuppose diverse conditions, structures, or antecedents.

3. Though the facts of life and of mind constitute an extremely complex and difficult array of data to be explained adequately or completely by the logically prior sciences, still our persisting inability so to explain them is due not to the facts themselves, but to our ignorance and imperfect experimental technic. No fact has thus far been shown to be either inconsistent with physico-chemical science or inexplicable by this science. Rather continued successes have met experimental research (especially since the early nineteenth century) in explaining many vital and mental facts mechanistically.

4. The admitted novel facts of life and of mind or combinations of facts are to be explained as the consequences of higher levels of organization; for organization both in the field of the lifeless and in the field of the living exhibits properties not present in the elements or members of the organized system. Hence it is believed that organization without the assumption of further postulates will explain both life and mind.

5. However, it may be true that there are genuinely discontinuous facts exhibited by these organizations, such as the sensory data of minds, but these discontinuous, or inexplicable facts are always in one to one correspondence with configurations of the organized system and these configurations can be explained mechanistically. That is, we have to admit that the majority of scientists during the past three centuries have found in mental states facts logically discontinuous with physics. Hence in psychology have appeared such postulates as parallelism, the double aspect theory, and interactionism. Still there have also been scientists hopeful enough to believe that science may in time analyze these discontinuous facts and find no break in the logical continuity of science. If there are such discontinuous facts there seems to be no reason to assume that they are to be found only in the fields of consciousness, although scientific tradition seems to place them all there.

6. The remarkable traits of life and of mind, such as chemical auto-synthesis, adaptation, regulation, and in general the functional

and teleological traits are the consequences of natural selection, or equilibrium, and presuppose the same postulates that explain equilibria in the field of the lifeless.

In contrast with mechanism, vitalism exhibits the following traits.

1. It is deeply impressed with the variety, diversity, and uniqueness of the facts of life and of mind. It finds in science a gross oversimplification of these facts or even a blindness to many of them.

2. It is more primitive than science. It is a persisting animism coming from our remote past, "a call of the wild."

3. It has a religious motive. The world would seem more in tune with the heart of man, life would seem more mysterious and venturesome, if both were inexplicable, or if both contained creative agents, teleological agents, and genuine spontaneity.

In my paper I shall try to show that in our present ignorance the best method of meeting the issue raised is the pragmatic.

1. Lived up to consistently, romanticism is a return to savagedom. Civilization presupposes skill and explanation. It presupposes that man can understand and control himself and his environment.

2. Science depends upon experimental research and this in turn presupposes that diverse events, properties, or effects always presuppose diverse discoverable conditions. Vitalism seems to deny this; for it seems to assert that agents or factors are present that by hypothesis can not be analyzed, that have no structure, and that possess powers which are genuinely creative (powers that are inconsistent with the principles of thermodynamics).

3. Romanticism and in particular vitalism seem to be symptoms of discouragement and fatigue. Vitalism is ready to quit, to declare the enterprise of explaining life and mind by theories consistent with physico-chemism impossible, and is not hopeful enough to ascribe our present inability to ignorance.

4. Vitalism is, however, pragmatically valuable in its extreme empiricism. It warns us against overlooking facts, against rash and premature simplification of facts, and against blindness to the novelty, uniqueness, complexity, and teleology of life and mind.

In conclusion I would add that I agree with Professor Henderson's statement of physico-chemical mechanism and prefer Professor Warren's restatement of paragraph 7, though the more general wording of Professor Henderson may be advisable.

ABSTRACT OF PAPER BY PROFESSOR R. F. A. HOERNLÉ

In the course of the argument which I hope to contribute to the discussion, it is, at present, my intention to deal with the following points:

1. Our basis of reference seems to me to afford a good opening for discussing how far, and in what sense, a *unified* theory of the universe is possible. As against the two extreme views (*a*) that such unification must be achieved exclusively in mechanistic terms, or (*b*) that, failing this, we must admit absolute discontinuities in the scheme of things, I shall try to argue for unification by correlation of differences—a concept of the universe as, so to speak, a stratified system, implying an order, in which differences may be correlated with, but can not be dissolved into, each other.

2. On this basis, therefore, it will be possible to argue (*a*) for the “autonomy of life,” *i. e.*, of the characteristic concepts which biology needs in order to give an adequate theory of the living as distinct from the non-living; (*b*) for mechanical and biological concepts as complementary and “cumulative,” not as mutually exclusive. I accept the view that the phenomena of life rest on physico-chemical mechanisms, but I insist that they must also be dealt with *in their own terms*, and that we should not regard it as the ideal of science some day to be able to discard, *e. g.*, the terms appropriate to the theory of animal or human behavior in favor of an account expressed exclusively in terms of physico-chemical formulæ. This recognition of the “autonomy of life,” which seems to me the empirical truth in Vitalism, does not, I think, necessitate the concepts of a specific vital force, or vital energy, or Drieschian entelechy.

3. It does, however, raise the problem of the sense in which teleological concepts are applicable. To eliminate from biology the concept of purpose, so as to retain solely the concept of cause and effect, involves, I shall try to argue, an undeniable loss. My argument will require (*a*) a brief analysis of the concepts of determinism and causality, especially as employed in experimental research; (*b*) the attempt to establish a sense of “purpose” which does not imply conscious design, still less a designer, after the manner of the old physico-theological proof. A comparison of machines in the strict sense, *i. e.*, man-made artefacts, and living organisms will here be found relevant, and throw light on the general relation of mechanical to teleological concepts.

REVIEWS AND ABSTRACTS OF LITERATURE

Applied Psychology. H. L. HOLLINGWORTH and A. T. POFFENBERGER. New York and London: D. Appleton and Company. 1917. Pp. xiii + 337.

Psychology has indeed become a subject of great and widespread interest to-day to the popular mind. An increasing number of peo-

ple are desirous of making a real application of it to the actual affairs and problems of daily life. Naturally they look to the experience and instruction of our schools of psychology to teach them how this is to be done. Naturally also they cherish a hope of great things which are to be accomplished to make the struggle for existence more effective and less burdensome. In how far are the schools equal to their opportunity?

The present volume is an attempt to set forth concisely but comprehensively the plane of advance which applied psychology has reached, the principles of psychology and the psychological facts upon which it bases itself, and then its contact with various departments and activities of modern life. The behavior of man forms the objective starting point for such a psychological approach to these practical concerns and to the psychical factors underlying it. This involves the discussion of the general principles of behavior, the elements which go to make up this behavior, that is the acquisition of elements through inheritance and individual experience, and finally the ways by which behavior may in any situation be controlled.

A brief review of the history of applied psychology notes the vague psychological interest in the workings of the mind upon daily problems which has always occupied even popular thought, the early attempt to transfer methods and findings from the psychological laboratory into other fields, with later the interest in studying actual daily material of practical life in which experiments are carried on. These, however, the authors complain, still fail to take sufficient account of the human factor as it actually exists in relation to the practical subjects in hand. This is a problem of great complication and under the influence of many factors. Furthermore, as is pointed out, psychology has properly to do with the means to an end, not with any judgment concerning the end itself.

Such being the outline of the book, the authors discuss some of these factors which must be taken into consideration. First of these is heredity, which is manifest in somatic reflex activities, in instincts, which are enumerated as part of original equipment, physical inheritance, as confined to family likenesses, where mental inheritance also manifests itself. The modification of inherited traits, particularly in original tendencies to action, is also the subject largely of experimental study especially as revealed in the process of learning by trial and error, choice of efficient movements and elimination of those which hinder efficiency and skill, the influence in this of pleasure and dissatisfaction, the use of memory, proper distribution of time and effort and the presence of an intention or "will to learn."

Whether these processes are influenced by age or sex, how far

environmental conditions, such as temperature and humidity, play a rôle in learning and efficiency, the condition of fatigue, its meaning, its control and regulation and the importance of considering its influence, these are all set forth as they broaden the field for psychological investigation and touch the application of it to industrial and other practical affairs. Some experiments have also been made in regard to various drugs and stimulants and their effect upon the mental processes, as they are observed in the laboratory or in practical life.

The methods of applying psychology to social problems depend first on an analytic attitude toward the materials and tasks in hand, and then must utilize the knowledge of material and processes acquired employing the psychological technique. The authors then go on to show how this can be utilized in the executive management of industrial affairs, in the activity of the workman himself and the reaching of the public as the market of supply. Further the same principles apply to law, medicine and education.

The chief criticism to be directed against the book is that which refers to this laboratory effort of psychology as a whole. The writers themselves have felt it and anticipated it when they refer now and then to the lack of attention to the human equation. How far this latter lifts every one of these problems out of the realm of mechanically tested facts and sets them far beyond evaluation and control through merely static measurements and conclusions even they fail to appreciate. It is just this larger factor that separates psychology inevitably from the more exact sciences, even as biology itself is rendered elusive, fluctuating, to some extent unpredictable, because it deals with living substances in a state of constant flux. Even more psychology, properly to fulfil its task and reach results which actually affect human processes, must keep itself in appreciative touch with such an inherent dynamism, of far greater extent in the mental life, and ever on the alert for the surprise and the unpredictability of the human element.

Yet, even as laws are discoverable in the biological realm, so does mental life itself express lawful activities which have formed themselves out of the mass of experiences which organic beings, in the end human beings, have accumulated to themselves through eons of psychic experiences. Such a gentile view of the subject shows at once how futile is then the application of such limited laws-as appear in behavior considered from the point of view of immediate consciousness, which can be expressed only in superficial measurements. The authors hint more than once of factors out of past inheritance. Every one must, of course, admit them. Why, then, do they not follow them up; why does not the science of psychology, if it will

make itself truly applicable to daily living and occupation, take these into account as vital, dynamic factors giving to behavior its set and its motive power?

The chapter on influence of drugs is plain in its testimony to the influence of the individual mode of response, individual adaptation to any environmental factor in the service of purpose and use, which so modifies the effect of that factor that static conclusions are rendered valueless. It is a matter of informing interest within to which too little attention is paid. Plasticity and pliability of adaptation are the most efficient characteristics of living matter and have developed with evolution to give the human race its ascendancy. They are controlled and governed by interest and through it they give to the individual his efficiency or, wrongly directed, condition his failure. Here, then, is the effective factor in all psychological application, whether to business, education, medicine or what not. Why, if there is interest, it may be asked, can we then speak of its failing? This is one of the neglected points of laboratory psychology. There is an unyielding tendency in psychologists, as in the rest of mankind, to refuse to recognize and admit all the channels of this interest. Culture, as well as the practical affairs of life, have been too intent upon attaining momentary efficiency and security, to stop to consider from where such efficiency came, to recognize other concealed interests which also play continually upon external interests and too often distract and confuse. Conceiving interest, however, as merely an expression for the value of an energy, indestructible and therefore only transposable, in the purposes of life, it can be seen that interest may be in the task in hand or it may have retreated to other secret occupations.

Psychology's task, therefore, becomes much more human, much deeper and broader, even in fitting the telegrapher to his task, when the dynamic possibilities within any individual, psychology's material, are realized. It means more emphasis laid upon the human being as a sum of such active, constantly playing factors, in the terms of an easily shiftable and transmutable energy. It means the finding and following of a controlling interest sufficiently motivated from the great impulses alive in every human being and individually accentuated according to that individual's peculiar circumstances and inheritance. The realization of the power of human purpose and the need and possibility of its guidance and control through enlistment of distracting forms of interest, which are also naturally present, into some main channel of efficiency, this is the practical implement of service in the hands of the experimental psychologist. Tests of response to certain environmental factors, such as those listed here, may aid to a certain extent if the larger view is kept

in mind, but they are disappointingly futile and limited in themselves for reaching human dynamic possibilities and directing them upon work or the solving of problems. Like intellectual so-called "mental tests" they take small account of factors actually and always at work. The latter can at best form but a limited initial stage to deeper research into controlling affective factors, upon which even intellect rests. In regard to environmental conditions, they have always been, and nowhere more than in present war conditions do they show themselves such, sources of stimuli and endeavor far more than forces themselves in control of the individual.

The aim of this book is as the first gleaming of light in the right direction. More than other works on applied psychology it points to a gathering together of all the elements which make up human psychical life for the psychologist's consideration. Nevertheless, it is only barely suggestive. Certain spheres to which it briefly refers could perhaps throw the flame much further could experimental psychologists grasp more fully the psychical unity in human society. Then, for example, child psychology would reveal these same dynamic elements at work in earlier stages, animal psychology would more effectually than now accomplish the same thing and so would anthropological psychology, in still another plane. Then also medical psychology would not be viewed even yet somewhat askance as dealing with a separated class of individuals. Inefficiency to construct a taking advertisement for subway publicity would be viewed as but one phase and a hysterical illness as another of an ineffectualness to meet the particular task in hand which life demanded, and the largely unconscious attempt on the part of either individual to substitute other interests, and the reactions which furthered them, for the interest-demanded by the task or mode of life in hand. Disease and inefficiency used as synonymous terms have much light to throw upon each other, and though they may represent widely different degrees yet they are expressions of the same form of reaction. An inquiring active public will welcome all effectual effort to discover and control the factors of human behavior, of human psychical activity, but let it go deep enough and itself show sufficient breadth and plasticity to effect its ends with the adaptable material with which it has to do.

SMITH ELY JELLIFFE.

NEW YORK CITY.

JOURNALS AND NEW BOOKS

THE AMERICAN JOURNAL OF PSYCHOLOGY. January, 1918. *Manaism: A Study in the Psychology of Religion* (1-49): IVY G. CAMPBELL. — *Mana* is conceived as a great personal spiritual power rising out of the social experiences of the interpreters. *Mana* arising from the social self is objectified and worshipped and regarded greater than the individual. Religion then becomes an attitude toward objectified qualities that were personal experiences. Bibliography. *French Origins of American Transcendentalism* (pp. 50-65): ALBERT SCHINZ. — The French influence has been greater on American thought than expected, while the German influence is usually exaggerated. This is especially true of American Transcendentalism. Dr. Girard, a former student of theology in French Switzerland, makes a clear case of the predominating influence of French writers. (This is a discussion of the origin of the theological and philosophical ideas in American Transcendentalism in the *Journal of Psychology*.) *Ethical Aspects of Chilkat Culture* (pp. 66-80): W. D. WALLIS. — The Chilkat tribe belongs to the Tlingit linguistic group and lives at the head of Lynn canal, north of Dixon entrance, Alaska. They have social classes or castes, keep a few slaves, family organization with the maternal side emphasized, and educate by story and tradition. Boys and girls are treated kindly. *A Qualitative and Quantitative Study of Weber's Illusion* (pp. 81-119): MABEL ENSWORTH GOUDGE. — Twenty-four regions of the body were explored. The illusion occurred more frequently in the longitudinal than in the transverse direction. *A Checking Table for the Method of Constant Stimuli* (pp. 120-121): GILBERT J. RICH. Note. — Dr. Morgan on the Measurement of Attention (pp. 122-123): K. M. DELLENBACH. *Book Notes*. H. L. Hollingworth and A. T. Poffenberger, *The Sense of Taste*. Henry Fairfield Osborn, *The Origin and Evolution of Life, On the Theory of Action, Reaction, and Interaction of Energy*. William Mackintire Salter, *Nietzsche, the Thinker; A Study*. Tighe Hopkins, *The Romance of Escapes: Studies of Some Historic Flights, with a Personal Commentary*. T. R. Glover, *The Jesus of History*. Henry Burton Sharman, *Records of the Life of Jesus; Book I, The Record of Matt.-Mark-Luke; Book II, The Record of John*. Kate Gordon, *Educational Psychology*. Seth K. Humphrey, *Mankind; Racial Values and the Racial Prospect*. Marion F. Bridie, *An Introduction to Special School Work*. Frank N. Freeman, *How Children Learn*. Charles Hubbard Judd, *Psychology; General Introduction*. Jean Lepine, *Troubles mentaux de guerre*. George Albert Coe, *A Social Theory of Religious Edu-*

cation. M. D. Eder, *War-shock; The Psycho-neuroses in War Psychology and Treatment*. Francis X. Dercum, *Rest, Suggestion, and Other Therapeutic Measures in Nervous and Mental Diseases*. H. Addington Bruce, *Handicaps of Childhood*. George W. Carey, *The Tree of Life: An Exposé of Physical Regenesiis on the Three-fold Plane of Bodily, Chemical and Spiritual Operation*. Elizabeth Lockwood Thompson, *An Analysis of the Learning Process in the Snail*. Joseph Peterson, *The Effect of Length of Blind Alleys on Maze Learning; an Experiment on Twenty-four White Rats*. Agostino Gemelli, *Sull' Applicazione dei metodi psicopofisci All'esame dei candidati all'aviazione militare*. Charles Hanson Towne, *The Balfour Visit*. John J. B. Morgan, *The Speed and Accuracy of Motor Adjustments*. H. C. McComas, *Apparatus for Recording Continuous Discrimination Reactions*. David I. Macht and Shachne Isaacs, *Action of Some Opium Alkaloids on the Psychological Reaction Time*. Julian Restrepo-Hernandez, *Lecciones de Antropologia*. Orison Swett Marden, *How to Get What You Want*. June E. Downey, *The Association Test as a Substitute for the Quiz*. June E. Downey, *The Stanford Adult Intelligence Tests*.

REVUE PHILOSOPHIQUE, February, 1918. *Convergences des développements linguistiques* (pp. 97-110): A. MEILLET. - In the development of related languages we find "parallelism of changes of general structure, divergence of innovations having to do with the material means of expression." In true internal linguistic changes we find that "the innovations are general rather than generalized, and that the identity or parity of conditions in which the speaking subjects are found is the essential fact, imitation a secondary thing." *Les fondements d'une théorie de l'hérédité* (pp. 111-147): E. RABAUD. - "The plastic substances which form the diverse living matters do not conserve, once they have been associated, their complete independence. They form complex systems in which each component submits necessarily to the influence of the others. When, in developing, one of the systems gives birth to an organism, its parts do not spring each from a particular component; all derive from the group of phenomena of which the system is the seat." *Études de logique comparée* (third and last article; pp. 148-166): P. MASSON-OURSSEL. - A trait common to the Indian, Chinese and European civilizations is that "the logical effort is manifested through a sophistical movement and terminates in a scholasticism." The comparative analysis puts into evidence the relativity of logical ideas and shows that the current definitions of logic are not satisfactory. "Logical problems, instead of being formulated *a priori* in pure reason, as prejudicial conditions of every speculative verity, are presented only

in connection with the given theoretical needs of a civilization, and are resolved only by an implicit application of current metaphysical doctrines. Their form corresponds to these needs, their matter reflects these doctrines. 'Formal logic is only an abstract of the metaphysical logic, and this latter derives, at bottom, from that virtual logic into which the spontaneous steps characteristic of the spirit of a people are ingeniously translated.'" *Analyses et Comptes rendus*. Gaston Richard, *La question sociale et le mouvement philosophique au XIX siècle*: ÉMILE BRÉHIER. *Studies in Psychology* (in honor of Titchener): B. BOURDON. *Revue des Périodiques*.

PSYCHOLOGICAL BULLETIN. December, 1917. GENERAL REVIEWS AND SUMMARIES: *Psychological Effects of Drugs*: A. T. POFFENBERGER, JR. *Reaction Time*: V. A. C. HENMON. SPECIAL REVIEWS: Dunlap's *Psychobiology*; Gerrish's *Sex Hygiene*; Robie's *Sex Ethics*; S. I. FRANZ. REPORT: *Report of the Committee on Reeducation Research*. BOOKS RECEIVED. NOTES AND NEWS. PUBLISHER'S Announcement: Owing to the number of psychologists engaged in government work, and the consequent decrease in psychological investigations, it has been decided to suspend temporarily the publication of the *Journal of Experimental Psychology*. The publication will be resumed as soon as conditions warrant. Meanwhile the experimental material will be published in the *Psychological Review*. *Indexes*.

Smith, Norman Kemp. A Commentary to Kant's 'Critique of Pure Reason'. London: Macmillan and Company. 1918. Pp. lxi + 615. \$6.00.

NOTES AND NEWS

The Argentine weekly, *El Universitario*, has sought to obtain by means of a questionnaire an expression of opinion as to which are the one hundred best Argentine books. In reporting the result, the titles have been classified in ten groups and ten books noted in each group, but five books receiving many votes have been added to the ten of each group. The *Revista de Filosofía*, from which we take the following list, observes that the list is decidedly better than what is usually to be expected from such inquiries, but expresses surprise that the drama is unrepresented, a field, to be sure, usually not available in book form. In the groups of fifteen titles that follow, the last five of each group are much esteemed, but not so much as to be listed among the favored ten. Such a bibliography of Argentine literature should be at the service of all friends of South American culture.

Diez Libros de Historia.—Vicente F. López, “Historia Argentina”; Paul Groussac, “Mendoza y Garay”; Bartolomé Mitre, “Historia de Belgrano”; Bartolomé Mitre, “Historia de San Martín”; José M. Paz, “Memorias”; Adolfo Saldías, “Historia de la Confederación”; José M. Ramos Mejía, “Rosas y su tiempo”; Martín Ruiz Moreno, “Hist. de la Organización Nacional”; Paul Groussac, “Liniers”; José Manuel Estrada, “Historia Argentina”; Han sido muy indicados los siguientes: Francisco Ramos Mejía, “El Federalismo Argentino”; Mariano A. Pelliza, “Historia Argentina”; Gregorio Funes, “Historia Argentina”; Benjamín Victorica, “Urquiza y Mitre”; Carlos Correa Luna, “Don Baltasar de Arandía.”

Diez Libros de Prosa Literaria.—Domingo F. Sarmiento, “Facundo”; Paul Groussac, “Del Plata al Niágara”; Miguel Cané, “Juvenilia”; Eduardo Wilde, “Aguas Abajo”; Joaquín V. González, “Mis montañas”; Domingo F. Sarmiento, “Recuerdos de Provincia”; L. V. Mansilla, “Los indios Ranqueles”; Leopoldo Lugones, “Guerra Gaucha”; Angel Estrada “El color y la piedra”; Belisario Roldán, “Disursos.” Han sido muy indicados los siguientes: Miguel Cané, “Notas e impresiones”; Ricardo Rojas, “El país de la selva”; Lucio V. López, “Recuerdos de viaje”; Nicolás Avellaneda, “Escritos literarios”; Leopoldo Lugones, “Prometeo.”

Diez Libros de Poesía.—Olegario V. Andrade, “Poesías”; José Hernández, “Martín Fierro”; Esteban Echeverría, “La Cautiva”; Almafuerte, “Poesías”; Rafael Obligado, “Poesías”; Leopoldo Lugones, “Las Montañas del oro”; Calixto Oyuela, “Cantos”; Ricardo Gutiérrez, “Poemas”; Hilario Ascasubi, “Santos Vega”; Juan Cruz Varela, “Poesías.” Han sido muy indicados los siguientes: Estanislao del Campo, “Fausto”; Carlos Encina, “Poesías”; Enrique Banchs, “Poesías”; Evaristo Carriego, “Poesías”; José Mármol, “Armonías.”

Diez Libros de Política.—Juan B. Alberdi, “Bases”; Juan B. Alberdi, “Derecho Público Provincial”; Juan B. Alberdi, “Sistema económico y rentístico”; Esteban Echeverría, “Dogma socialista”; Agustín Alvarez, “Adonde vamos”; José Nicolás Matienzo, “El sistema representativo federal”; Agustín de Vedia, “La Constitución Argentina”; Joaquín V. González, “Política espiritual”; Rodolfo Rivarola, “Del régimen federativo al unitario”; Mariano Moreno, “Escritos.” Han sido muy indicados los siguientes: Agustín Alvarez, “Manual de Patología política”; Martín García Mérou, “Ensayo sobre Alberdi”; Ricardo Rojas, “La Argentinidad”; Bernardo de Monteagudo, “Escritos políticos”; Julio Costa, “El presidente.”

Diez Libros de Sociología.—Juan Agustín García, “La Ciudad Indiana”; Juan B. Alberdi, “Estudios económicos”; Carlos O. Bunge, “Neutra América”; José Ingenieros, “Sociología Argentina”; José M. Ramos Mejía, “Las Multitudes Argentinas”; Ernesto Quesada, “La época de Rosas”; Alfredo Colmo, “América Latina”; Lucas Ayarragaray, “La anarquía argentina”; Leopoldo Maupas, “Caracteres de la sociología”; Juan Agustín García, “Ciencias sociales argentinas.” Han sido muy indicados los siguientes: Raul Orgaz, “Estudios de sociología”; Ricardo Levene, “Orígenes de democracia argentina”; Domingo F. Sarmiento, “Conflicto y armonía de las razas”; Juan Alvarez, “Guerras civiles argentinas”; Joaquín V. González, “Ley Nacional del Trabajo.”

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THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

METAPHYSICS AS A FINE ART

THE name of metaphysician hath a sounding excellence. In the pursuit of a profession, I have been something of a typographer, of a lexicographer, of a pedagogue, and in an amateur fashion of an anthropologist—all goodly Greek. But the core of my ambition (for I must confess it) is to be a metaphysician. I like the sonance of the name (in despite of those levitous persons who make an indecorous pun upon it); and I like the high freedom of metaphysical pursuits; and even more I like the desirable and eminent company of metaphysicians themselves, and to think myself a member—no matter how humble—of so ancient and honorable a guild.

Moreover, there is a fine complacency to be derived from the profession (which it is really no trick to profess) in its social bearings. You exchange cards with a stranger—say, in a Pullman—and after you have mutually mastered the articulation of one another's names, the leading question is sure to be:

“And what is your line, may I ask?”

To which, with a certain Jovian directness: “I am a metaphysician.”

A pause, and then: “Ah! . . . Ah, yes; a doctor?”

“*Per accidens* only,” you respond. “*Essentialiter* a metaphysician is unadorned by titles.”

Your companion is uncertain whether to continue the conversation or talk politics; but he is polite: “Is business good in your line? Does it pay well?”

And you: “Couldn't be better with me. How is it with *you*?”

“Slump all along the line. Nothing goes but war goods. Mine's women's wear.”

With a slightly bored readvertence, you rejoin: “I did not refer to material pursuits or pay. I alluded to the returns of metaphysics.”

The light of suspicion appears in his eye: “I miss your drive,” he says bluntly.

“Why,” you return patiently, “you also, though you may not be aware of it, are a metaphysician. Yours, to be sure, is only the

metaphysics of common sense, for you are a plain man (understand, I do not refer to your physical charms, which are quite the average), and because of your engrossment in practical affairs you have never become reflectively aware of such metaphysics as you have—yours necessarily, in the character of man, thinking and rational. My case is rather different. I am—pardon me for so putting it—upon a somewhat different level, an initiate, as it were, into the secrets of those illumined minds who have brought metaphysics into the daylight of its own self-awareness. It is very pleasant to be an initiate.”

The chances are against the continuance of the conversation, especially if you drop this last remark with a scarcely perceptible sigh of satisfaction. If it does continue the subject will probably be some very confidential information as to easy evasions of the prohibition law in dry states—for there is a fellowship in all inspirations.

Of the truth of the converse proposition, namely, that there is inspiration in all fellowships, I am by no means so fully persuaded. I do not refer merely to the company of the disreputable (where, indeed, I suspect that the inspiration of fellowship counts for most); but I do refer to certain forms of the association of metaphysicians themselves. There is—and this is the core of my qualm—a danger to metaphysics itself in a too social self-consciousness. It is not merely the company that the metaphysician keeps, but the fact that he keeps company in his metaphysics that is damaging. Metaphysics, the moment it becomes self-aware, develops a fine complacency, all its own, and surely not to be quarreled with by fellows of the craft; but when to this natural afflatus there is added the complement of the reflected complacencies of a whole school of associated spirits—well, *Meden agan!* even of metaphysical satisfactions.

Moreover, I have a deep and heretical suspicion that both the devices of association and the complacencies which it generates are inventions of an anti-metaphysical devil, for the ruin of the truth. This devil is a shrewd enemy, and he knows that metaphysicians (when they are such in their own conceit) are led easily into idolatry, and that of all delusive idols those of the Forum delude them most. And so he institutes metaphysical *thiasoi*, the members of which together clash their timbrels while they beat the brown earth with unanimous feet and sing dithyrambs in honor of the spirit of their intoxication. For it is the supreme guile of this arch-trickster to persuade all who cross the limen of metaphysical consciousness that your true initiate must be an *-ist* and must have an *-ism*—whereas all the time he is gleefully aware that the typical case of metaphysics (not, to be sure, necessarily with a benevolent prognosis) is that of your plain man, blissfully unconscious of his common sense and absorbed in the sale of women's wear.

I should like to expatiate upon this suspicion of mine (which some, I fear, will view as a mere prejudice), and ask whether there is really any meaning, beyond the afflatus of the incantation, in proclaiming oneself a materialist or an idealist or an absolutist or a pragmatist or a neo-realist or a neo-realistico-logistico-mathematicist? And again, whether a book formidably published by Ali Baba and some forty co-conspirators can possibly be as good metaphysics as the honest records of a simple mind—such a work, say as *Samuel Pepys, His Diary*? or whether, indeed, it can touch such near and significant realities as the worthy householder himself, his wife and servaunt Jane? I should like to expatiate upon these germane questions; but the truth is I can not long tolerate, even for rebuttal, the sibilant syllable *-ist*. As I strive to rise to the issue I begin to see images of a canny sharp-featured face, with a finger at the nose, and I start at the warning sound—*Hist!*—close at the ear; and forthwith, from what *Kaiserreich* of ideations I know not, there stream before my bewildered fancy the serried ranks of the schools, all accomplished in the goose-step and all with unabated voice proclaiming *Gott mit uns! -ismus über Alles!*

For there seems to me to be something both monstrous and pathetic in this effort of metaphysicians to form in phalanxes and cohorts and to move with militant accord. It is monstrous because it so distorts nature, and most distorts the nature of that reason to which metaphysics is supposedly the highest devotion; for it takes from reason freedom of hypothesis which is reason's vital spark, and leaves but the stiff and jointed shell of the rational life; till at last it is but a mere mechanic slave who masquerades as your high empiric of the soul. And it is pathetic in that it is all done—this pedant scholasticizing—in answer to an old and silly jibe, with which Plato once toyed contemptuously. For there were smug-mouthed conversationalists in Athens as there are smug-mouthed conversationalists nowadays who spoke with pharisaical intonations of the disagreements of philosophers, and cast it up to them that their pretended science was a hurly-burly of opinions—each of which, by a clever verbosity, could be made to appear the better. As then, so now; still they make merry: "Behold the philosophers! after twenty-five centuries of wrangling, worse at odds than ever in their pretended science!"

Now the dismal face of the matter is not the certainty that they are right, and that metaphysics is indeed only a pretended science, but that there should be metaphysicians to make the pretension. That is what is dolorous about the schools, with their formalisms and acclamations, their postulates and *quod erat's*; they are trying to substitute the lugubrious technic of science for the free inspiration

of art—thereby perverting a noble art into a mimic science. History itself is their copious refuter; for what *-ist* is Socrates or Plato or Aristotle, Origen or Augustine or Aquinas, Descartes or Spinoza or Kant? Wherever metaphysics comes to its own, we encounter men, not *-isms*—and such men as no professor of the faith need fear to set beside the constellations of any other art. It is true that Plato was the first academic and Aristotle the first peripatetic; but this was the accident of their pedagogy, not the epiphany of their metaphysic. And, indeed, I am quite ready to own that there are legitimate schools, of which metaphysic is the prime mover and the final cause, expressing this tutorial relation of master and disciple. Such schools extend across the centuries, and keep alive among philosophers reverence for their saints and their heroes. Only (for the difference is portentous) they ought never to be confused with *-isms*; and hence, for the purification of the distinction, I prefer a more humane termination. For gladly would I call myself a Platonian, meaning thereby to express my *devoir* to so lordly a tutor. Surely if there be two homages that can be paid, the one to rote a master's phrases, the other to preserve his image in the soul, the latter were to him the sweeter duty—which who hath performed more lovingly or more unto all men's admiration than Plato for his master Socrates?

All metaphysic has a soul of poetry. The art of the metaphysician is a fine art. It has, of course, a special technic, which may be acquired by study. But it is not the sort of a thing that can be reduced to texts—any more than the art of poetry can be reduced to texts. It should be pursued, not in a classified routine, but in the mode of the *atelier*, with the disciple under the eye of the master. Peripatetic excursions, symposiac unions, these are the conducive forms, from whose practise is to be maintained the true succession of philosophy. They are the apprenticeships, whereby each that would be a journeyman of the craft is made familiar with its tools and its traditions and is joined to the fair fellowship of the guild, ere he be sent forth to create by his art such images as his soul inspires. So taught, your metaphysician is a true empiric; nor (even though his art may be misprized) does he smell of deceit to the multitude.

But (and I have been loquaciously outspeeding the question)—what of the truth? Is not the end of metaphysics the discovery of truth, and can truth be a private thing? Should one make of metaphysics an art, a thing of human craft and design?—nay, of such a mean conceit that it could only be an art of autobiography! Who, forsooth, will be concerned for the “Memoirs of a Metaphysician” when he might have those of a Bismarck or a de Maintenon or even the small-talk of honest Pepys?

Yes; metaphysics is a search for truth. Nevertheless, I refuse to be discomfited by the question. Rather, I compose myself to an attitude of celestial calm, and smile in suave Chinese. For it is that kind of a search for the truth which is, like poetry and the other fine arts, autobiographical in method. Of course, it is not all grasped by any one set of memoirs—any more than the truth of human history is all told in one career. Nor is it all told in memoirs writ on a level; a part of it at least is to be found in the business memoranda of the unconsciously reflective plain man, and there is metaphysical significance in the sale of women's wear which, even in war time, can not wholly slump. To be sure, there are philosophers not a few who will cry fie upon such a humanly tainted thing. But my Oriental calm is unsubdued. For I think that the whole world of reason and the truth of all things desirable is embraced within the scope of this metaphysic, which never has been and never will be complete while men continue to live and to discover that they live. Wherefore I draw about me the ample cloak left me by mine uncle Protagoras and go my way in contentment.

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PRAGMATISM AND DEMOCRACY

I

“JUST what philosophy is nobody seems to know, but at any rate a philosopher is one who practises it.” These words, which I have just read from the pages of a current magazine, represent more than a labored effort to be amusing. They express a rather widespread feeling that philosophy has, in the vein of the epigram, suffered much from many practitioners. The truth is that philosophy is not so much in the midair of uncertainty as that a certain *method of philosophizing* has led to obscurity and confusion. And that method is the German method. This is neither a patriotic nor a spiteful remark. It *was* the German method that turned metaphysics into a logic of dialectic and fostered that inordinate preoccupation with abstractions which has subjected philosophy to caricature.

Now I believe that philosophy can be intelligently defined and I also believe very profoundly in its practical value.

In understanding a man's life two questions must always be asked. First, what has he done? And, secondly, why has he done it? To say this is not to say anything that is profound or obscure,

but it is to say something that is important. It is just as important to know what a man's *ideas* are as it is to know his occupation, his bank account, or the color of his eyes. In writing the history of a people it is not enough that you describe their material advancement, their industrial, their social, their scientific, their political achievements; you must also describe their aims, their spirit, their ideals, their national consciousness. For back of statecraft and industries, back of institutions and creeds and policies lie ideas.

That in some sense general ideas exist is a matter beyond dispute. And that in some sense, whether true or false, they exert a tremendous influence on human affairs is likewise a fact that no one doubts; though it is a rather sad fact that they often gain popular acceptance only when they have outlived their usefulness and thus become hindrances rather than aids to progress. And we are for the most part unconscious of this inherited stock of general ideas. They become so integral a part of ourselves and we get so adjusted to them that we scarcely know to what extent we are creatures of tradition. We do not consciously feel the weight of social and intellectual pressure any more than we feel the weight of atmospheric pressure. Our fundamental ways of looking at the world and our deep-seated responses to life are largely matters of inheritance. We think of the world in a certain way because Plato, or St. Thomas Aquinas, or Calvin once thought of it that way. And we do things in a certain way because others before us have done them that way, not that we consciously imitate the past but because the past survives and is conserved in the present.

It is the business of philosophy to discover the leading and controlling ideas that make up our intellectual tradition, to see how they have come about, and to estimate them with special reference to their fitness and applicability to current interests.

The war is the background for most of our thinking. I do not say that the war is a conflict of ideas. The psychology of why men fight certainly involves things more primitive than ideas. But I do say that there is a difference in principle between the general ideas that will prevail if Germany wins and those that will mark the success of the Allies. This we express by saying that the war is a conflict between autocracy and democracy. Just what does this mean?

II

Absolutism is the philosophy of autocracy. It is far beyond the pretension of this essay to describe absolutism as a metaphysical theory, or as an ethical, or even as a political theory. It is sufficient to show how the conception arose and to point out that it is one of

those general ideas that have outlived their usefulness and are now operating as a barrier to progress.

Philosophers during modern times have almost without exception viewed the world after the analogy of mathematics. Descartes, the father of modern philosophy, tells us that in his early life he was much confused and bewildered, he could never be certain of anything; he even went so far as to imagine that some diabolical spirit from the intellectual underworld was all the time deceiving him. Then he came upon the study of mathematics and thereupon, as if by magic, all of his difficulties disappeared. He was so pleased with the nature of mathematical knowledge that he attempted to build a system of universal knowledge after the pattern of mathematics. Spinoza was a mathematician. He made his living grinding lenses, and he wrote his *Ethics* "*de more geometrico*." And Leibnitz discovered the calculus. And Kant mapped out the domain of the inner life after the analogy of Newtonian physics. The seventeenth and eighteenth centuries were marked by the rapid development of mathematical, physical and mechanical science. No wonder that the modern philosophers saw in mathematics the key to the universe.

The mathematician is a very close and a very precise thinker. Things for him must be just right. They must be very clearly and distinctly defined and very neatly and accurately labeled. His mind just works that way. And that, perhaps, is why he is a mathematician. Now the mathematician is not concerned with circles and triangles as we often think he is. He is concerned with certain abstract relationships which he calls circularity and triangularity. Circles are more or less round, but the mathematician is concerned with perfect roundness, a thing which can once for all be defined and have its formula written. These mathematical objects—universals the logician would call them—are fixed and unalterable things, the same yesterday, to-day and forever.

These conceptions of fixity, rigidity and static perfection got themselves affiliated with medieval logic and the doctrine of the reality of universals. Autocracy was first a logical doctrine. The sovereignty of the universal and the passive submission of the particular were the pattern for feudalism and the hierarchial organization of the medieval church. The Renaissance marked no radical change in man's fundamental way of looking at things. New wine was put into old bottles. Logical autocracy developed into the despotism of science, and the Reign of Law became as inexorable as the fixity of a universal or as the supremacy of the Pope.

Whether this conception of absolutism is valid even within the domain of science is now coming to be an open question. The scientists themselves are telling us that their fundamental assumptions

are quite arbitrary, that they are true within a context, but that they have any universal and absolute validity is entirely beyond positive proof. The status of the concept of absolutism within the realm of science we leave an open question, but when the concept is lifted from its scientific setting and applied to social and political problems the time for revolt is at hand. It is in this way that general ideas, arising in a specific situation and in connection with a definite subject-matter, get themselves abstracted from that original situation and re-applied far and wide to totally different contexts. When such detached ideas work loose from their context they become abstractions. Such logic lifting with its criminal implications has been too often indulged in. The concept of absolutism is just such an abstraction. It arose as a mathematical generalization and has without warrant been carried over and applied to ethics and politics.

A glimpse at the main shifts in the development of modern political theory will show that it has moved within the domain of mathematical and mechanical concepts. The seventeenth and eighteenth centuries were centuries of political revolution. The concept of natural law and the doctrine of inalienable rights formed the basis of political theory. Milton, Locke and Paine found in the doctrine of natural rights a philosophical justification of revolution. But such a doctrine is but the political counterpart of the reign of law in external nature. It is an eighteenth-century doctrine, symptomatic of the influence of Newton, and expressive of the eighteenth-century glorification of natural reason.

When Bentham substituted the principle of utility for the doctrine of natural rights, thought took a step forward. It involved a complete change in intellectual attitude. Instead of reverting to first principles (abstract rights) it looked forward to consequences. But utilitarianism as a philosophy of social reform was vitiated by a mechanistic psychology. The association of ideas was viewed after the analogy of physical atomism. Now it is true that both the doctrine of natural rights and utilitarianism have helped forward the growth of democracy and liberalism. Each arose in a specific situation and ministered to specific needs, the one justifying revolution and the other encouraging reform.

The rise of the doctrine of evolution seemed to mark a real advance. Here, if anywhere, it would seem that we get away from physics and mechanics. We have done this so far as the facts are concerned, but not at all from the standpoint of their interpretation. The facts of biology were interpreted in terms of mathematical concepts. And such interpretation leads inevitably to the reduction of life to matter. Both Darwin and Spencer reduce change in the last analysis to the mechanical interplay of natural forces.

That is, adjustment is the outcome of natural selection, or, what is the same thing, it is left to the wear and tear of external conflict. But this is still absolutism in disguise. They have only shifted the problem from physical to sociological gravitation, but it is gravitation still, introducing all of the brutality of fate and the constraint of law into the realm of what, but for mechanism, might be human. The economic interpreters of history are doing the same thing. The view here is that those changes and transformations in the structure of society are due to economic forces operating according to external law. Control is external, objective and mechanical. Progress is at the mercy of mechanism.

III

There are times in the progress of intellectual history when man's experience has become so enlarged and expanded that it can no longer be contained within the framework of the existing scheme of concepts. It then becomes necessary to devise new ways of handling it. Such a period, for example, was the Renaissance. The wealth of new experience necessitated the discovery of new ideas as means of expression and interpretation. And such a time, I think, is the present. The last half century has placed at our disposal a vast stock of new material. This is the result largely of the rapid development of the biological sciences. The tremendous influence of the biological sciences at present is comparable to that of the physical and mechanical sciences at the beginning of modern times. But we have been slow to see the intellectual revolution involved in the wide application of the facts of biology. The time has come for a new method in intellectual analysis. Pragmatism is the philosophy which is expressive of such an endeavor.

It is not my purpose to undertake any exposition of pragmatism; it is merely to relate some of its cardinal ideas to the philosophy of democracy. The ideas which pragmatism is clarifying are just the ideas that lend themselves to a definition and restatement of democracy. That democracy needs restatement is, I think, a fact that no one would deny. And until the concept of absolutism is abandoned democracy can not be defined. The absolute sovereignty of the people, the absolute right of the individual—these are but disguised synonyms for despotism. The doctrine of abstract rights only took absolutism out of one sphere and put it in another. There is the danger that we are still doing the same thing. There is the danger that we just patch and tinker with old concepts when the situation demands more radical treatment. There is no use in trying to define democracy in terms of ideas that were framed under the despotic sway of science, and that *at a time* when physics and mechanics were all the science there was.

Absolutism took its cue from mathematics. Pragmatism takes its cue from biology. The biologist has little to say about universals and abstract relationships, but much to say about birth, growth and decay; about movement, change and development; about conflict, struggle and adjustment. The dominating ideas of absolutism are rigidity and fixity. Absolutism is a sort of intellectual caste system. Things are put into certain classes and there they must remain for all eternity. It involves an attitude which in the very nature of the case is uncompromising and unyielding. It is also impersonal, formal and coldly calculating. That such a doctrine makes for system, organization and efficiency can not be denied. But that it makes for tolerance, sympathy or sociability is seriously open to question. The absolutist does not recognize the claims of others. It is not that he has no manners; it is rather that manners cease to have any meaning when set in terms of absolutism. As long as we are dealing with absolutism in any form we are dealing with abstract and impersonal things. It contains in the very nature of the case no basis for human feeling, no considerations of courtesy or cooperation, and no foundation for a philosophy of humanity.

The leading ideas of pragmatism are flexibility, adaptation and compromise. Such concepts involve one at once in a system of relationships. Plato taught long ago that justice is a social matter and that until one has had a little experience he can not tell what it is. That is to say, right, equality, liberty—these are not abstract and absolute things; they imply personal and social relations. Each of us is bound to his fellows by a thousand vital ties. Compromise means a willingness to recognize those ties and to make our plans in the light of that recognition. To introduce compromise as a social ideal is to provide for a philosophy of liberalism. It is also to introduce human feeling into social practise and thereby to provide for a philosophy of humanity. And these are, I dare say, the germinal ideas for a philosophy of democracy.

Many writers have emphasized the facts of conflict and adjustment as descriptive of social phenomena. What they have thus far failed to do has been to locate and define the problem of control. To say that adjustment and compromise are social ideals is not to say enough. What one wants to know is *how* adjustment is effected. Does history present an inevitable evolution beyond human control, or may it be intelligently guided? The Hegelian philosophy of history, Spencerian evolution and the economic interpretation all come to the same point here. They are alike in viewing the function of intelligence as merely descriptive and retrospective. General ideas

are trailers. Intelligence is a sort of thermometer that registers nature's variations.

For pragmatism, control is primarily an affair of the intelligence, and consists in the creation of ends to be realized. This is one of those far-reaching differences between pragmatism and absolutism. It has to do with what may be called the chief end or purpose of development. Now a circle knows perfectly well what it wants; give it consciousness and it will go straight to circularity. But then circularity is there to go to, or what is the same thing, the end pre-exists. It is, as the logicians would say, a particular already subsumed under its universal, and no particular can possibly miss its universal. For the pragmatist the objective is not quite so clear. Where are things headed? you ask the pragmatist. Where do you want them to go? he replies. In themselves they are not headed anywhere. They are, however, in motion and so are bound to get somewhere, but *just* where depends on the creative imagination and the individual effort of human beings. The absolutistic doctrine of objectives is modified by the pragmatist into a doctrine of *projectives*. The creative power of intelligence is the sum and substance of pragmatism, intelligence being defined in the last analysis as the power to create projectives.

It is the creative power of intelligence that saves adjustment from mechanism. It also saves personality. Personality is the kind of a thing which can so easily be lost and which needs "continually to be rediscovered." It is a commonplace to say that absolutism involves the sacrifice of the individual. But has traditional democracy saved the individual? Has it done any more than to give the stronger unlimited and absolute power to slaughter the weaker? Any attempt to define personality in terms of absolutism is doomed to failure.

The war, we say, is a conflict between autoeracy and democracy. The formula which is best descriptive of German thought and action is self-development through struggle against opposing forces. Or as expressed in the language of philosophy, "thesis" develops into "synthesis" by overcoming "antithesis." The difference between autoeracy and democracy consists in a difference in attitude toward the opposing forces. Does "synthesis" involve an adjustment of conflicting claims, or a complete sacrifice of "antithesis" to "thesis"? Autocracy means *uncompromising* self-assertiveness; "antithesis" is just so much pathetic material consecrated to the development of "thesis." Fichte's Absolute must needs posit a material world in order to have something to cut its teeth on. Morality demands a "not-self" in order that "self" may grow and expand. The "not-self" derives its right to *be* only in so far as it contributes to the

expansion of the "self." Just that is its function. That is what Santayana calls egotism. The Germans call it romanticism. A better indictment would be romantic criminology.

For democracy "synthesis" means compromise, a willingness to recognize the claims of others, and the exercise of intelligence as a means of adjustment. Not rigidity, sacrifice and absolutism; but flexibility, tolerance, cooperation and compromise are the ideals for an American democracy.

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ON RELIGIOUS VALUES; A REJOINDER

IN an article in this JOURNAL¹ I have pointed out two fallacies that are met with frequently in works in the philosophy of religion, fallacies that I have called the "pragmatic fallacy" and the "fallacy of false attribution." Professor Brightman² and Professor Moore³ have presented criticisms of my views. In answering these criticisms I shall be led into a somewhat detailed discussion of religious values from the point of view of a behaviorist. The views of one who speaks of the meaning and value of God in human behavior are apt to be misunderstood, since religion is a field into which behaviorism has not as yet ventured far. However, since this is a direction in which study will prove fruitful, I shall offer a classification of religious values, which will make clearer what would be an objective, behavioristic account of religious values, and which will also be a part of my answer to my critics.

I

The pragmatic fallacy in the philosophy of religion, as I have defined it, consists of the identification of the value with the truth of religious beliefs, and of the acceptance of those religious beliefs as true which are found to have value. I have insisted that the concepts of truth and of value can not be identified. I have pointed out especially that the survival-value of religious beliefs in human evolution is no evidence of the truth of the beliefs, contrary to the view of James, who was the first to employ Darwinism in defense of religious truth. Further discussion of the meaning of value is obviously needed, but I presupposed among the readers of my article a sufficient familiarity with the developments in the theory of value

¹ *Two Common Fallacies in the Logic of Religion*, this JOURNAL, Vol. XIV., pp. 653-660.

² This JOURNAL, Vol. XV., pp. 71-76.

³ This JOURNAL, Vol. XV., pp. 76-78.

from the work of Meinong⁴ and of Ehrenfels⁵ to recent discussions in this JOURNAL to obviate such misinterpretations as have been laid on my statements by Professor Brightman.

Though the pragmatic fallacy may be maintained equally well in connection with other theories of value, the theory which I accept, as I suggested in my original article, is one which defines value in terms of organic attitudes and acts, in terms of liking and desiring; and liking and desiring may be most adequately treated in behavioristic terms. An object possesses value if some organism has an interest in it; and to have an interest in an object means to act in such a way as to try to get possession of it (or retain it if already possessed), or at least to enjoy it, as in the case of esthetic values. Since interests and likes and dislikes have meaning only in terms of behavior, value may ultimately be defined in terms of reactions or responses, positive or negative. Positive response constitutes positive value (the good, the desirable, *etc.*), and negative response constitutes negative value (the bad, the undesirable, *etc.*).

But value is not so simple and obvious a thing as such a definition might seem to imply. There are various types and classes of values, all coming within this one definition. I might have presupposed that my readers would be familiar with the common distinction between independent, or immediate, values, attaching to objects valued for their own sake, as ends, and dependent, or instrumental, or derived, values, attaching to objects only when such objects are instrumental to other objects possessing independent values. Instrumental values are "derived" from the relation of the objects to other objects directly valued. An instrumental value is thus only indirectly the object of interest. Though I might have presupposed familiarity with such a distinction between independent and dependent values, I was careful to state⁶ that biological utility is a case of what I have here called instrumental value, not independent, since an object that possesses biological utility, *i. e.*, one that is instrumental to the preservation of life, "is indirectly the object of interest or desire, since life is valued with approximate universality." But Professor Brightman overlooked my statement of this distinction, and tries to make out that I have presented two definitions of value, a psychological and a biological one.⁷ My single definition is, rather, a psycho-biological one, and allows for the distinction between independent and dependent values. The classifi-

⁴ A. Meinong, *Psychologisch-Ethische Untersuchungen zur Werttheorie*, Graz, 1894.

⁵ C. von Ehrenfels, *System der Werttheorie*, 2 vols., Leipzig, 1897.

⁶ *Loc. cit.*, p. 654, note 3.

⁷ *Loc. cit.*, p. 72.

cation which I shall present a little later will make my position clearer.

Professor Brightman makes two confusions of the issue when he refers to my distinction between what I called "scientific" and "metaphysical" beliefs. I said that "scientific" beliefs, referring to details of the physical environment and capable of empirical verification, must be true in order to be valuable. I cited the case of belief in the safety of the ice as an example. Professor Brightman,⁸ in the first place, confuses the belief in the safety of the ice (the belief is a psychological entity—ultimately a behavioristic fact) and the ice itself. I spoke, not about the value of the ice, as Professor Brightman tries to make out, but only about the value of the *belief* in the safety of the ice. Whether or not the small boy likes the ice itself is an extraneous matter. In the second place, as I pointed out, it is the indirect or instrumental value of the belief (its instrumentality in relation to survival, survival being directly desired) that is in question, not its independent value as the direct object of desire, as Professor Brightman seems to think.⁹ So whether or not the small boy likes to *believe* in the safety of the ice is also an extraneous matter. The actual instrumentality of the belief is the important thing.

As a result of these two confusions, Professor Brightman's criticism of my statement of the pragmatic fallacy falls down. When he concludes that he has reduced my pragmatic fallacy to "the argument that a belief is true because we desire it to be true,"¹⁰ he shows his entire failure to take into account the distinction between independent and dependent values. The chief error of some pragmatists when dealing with the philosophy of religion, and of James especially, has been in maintaining that religious beliefs possessing survival-value thereby demonstrate their truth. Such beliefs may or may not be true. Nothing can be inferred from their survival-value as to their truth. To maintain that survival-value of religious beliefs is evidence of their truth is to commit the pragmatic fallacy.

Professor Moore objects to my distinction between "metaphysical" and "scientific" beliefs. He says¹¹ that even false "scientific" beliefs may be "subjectively" valuable, as in the case of belief in the non-existence of pain, while being "objectively" harmful through hindering the cure of the disease. This is all very true, and does nothing to invalidate the distinction that I made. It helps to confirm it instead. The fact is, as Professor Moore points out in

⁸ See *loc. cit.*, pp. 71, 72.

⁹ *Loc. cit.*, p. 72.

¹⁰ *Loc. cit.*, p. 72.

¹¹ *Loc. cit.*, p. 77.

this example, that "scientific" beliefs do have "objective" effects, and hence must be true if they are to possess a balance of positive value. "Metaphysical" beliefs, on the other hand, as I defined them, can not have "objective" effects to counterbalance any "subjective" effects of positive value that they may have. Professor Moore does not deny this, but simply claims that they may have harmful effects on "the spiritual nature." This is beside the point when the case is being argued on the biological grounds of pragmatism, for "the spiritual nature," in Professor Moore's sense of the term, does not count as a factor of biological significance in the struggle for existence.

It is necessary to make the distinction that I did between "scientific" and "metaphysical" beliefs or else, from the premises of the instrumentalist, it would follow that all beliefs that survive would be true, and survival would be the test of truth. Professor Moore would not grant that this is the case any more than I do. I pointed out that some beliefs, which I called "metaphysical," in that they do not refer to the physical environment, may possess a "subjective" value even if not objectively true, and may prevail and survive because of this "subjective"¹² value.

II

Having defined value in its generic sense in terms of interest or desire, it remains for us to differentiate religious values from other values, such as ethical, economic, and esthetic values, and then to classify the religious values. Religious values may be differentiated from the values dealt with by the other value sciences by reference to the objects to which they are said to attach, i. e., to the supernatural objects of belief, to the acts of worship that such belief leads to, and especially to the beliefs themselves, regarded as psychological objects.

The distinction between immediate and instrumental values, and that between real and ideal values, are the chief ones to be pointed out in a classification of religious values. Immediate and instrumental values have already been defined. Ideal values are those which we predicate of objects that are not real, but depend for their existence on the valuing subject being "invoked by an interest and held in existence only by the act of imagination."¹³ Real value-objects, on the other hand, are objects that exist independently of

¹² I enclose the terms "subjective" and "objective" in quotation marks to indicate that I use them in a special sense. For behaviorism the term "subjective" lacks its usual connotation.

¹³ R. B. Perry, *Religious Values*, *American Journal of Theology*, Vol. XIX. (1915), p. 3.

the interested subject. They are facts, while ideal value-objects are fancies.

My classification of religious values, which follows, is in general agreement with one already made by Professor Perry,¹⁴ but I have made several added distinctions to allow for cases of value that could not otherwise be provided for.

Instrumental values are of importance in the study of value, especially in the case of religious values. There are several distinguishable sorts of instrumental values. The mere causal connection between two objects, one of which is directly valued, is one case. I refer by this to the relation of *A* to *B* when *A* is the condition of *B*'s occurrence or existence. A second case is that involving the judgment that *A* is the condition of *B*, when the judgment is true. A third case is that in which there occurs the judgment that *A* is the condition of *B*, when the judgment is false, though *A* is real. A fourth case involves the judgment that *A* is the condition of *B* when *A* is unreal, though believed real, but such that the judgment would be true if *A* existed. A fifth case is that involving the judgment that *A* is the condition of *B* when *A* is unreal, and when the judgment would be false even if *A* existed.

In these five cases we find, first, the distinction between actual causal connection and the judgment of, or belief in, such connection; second, the distinction between true and false judgments of causal connection when truth and falsity depend upon the reality or unreality of the causal connection; and third, the distinction between true and false judgments of causal connection when truth and falsity depend upon the existence or non-existence of *A*. A combination of the second and third cases occurs when *A* is valued because judged instrumental to *B*, and when, as a matter of fact, *A* is unreal, and when the relation of instrumentality could not hold even if *A* existed.

The mere relation of causality or instrumentality in itself does not constitute value;¹⁵ but we may say that an object has value if it is actually instrumental to a *valued* object, even though the instrumentality is not recognized. If *A* is actually instrumental to *B*, and if *B* is the object of desire, then it is permissible to say that *A* has *conditional* instrumental value. The biological value of many religious beliefs is of this sort. In such a case the object *A* is not the object of an actual interest, but it would be desired *if* its instrumentality to *B*, which is desired, were recognized.

All of the above distinctions are provided for in the three following tables:

¹⁴ *Loc. cit.*, pp. 1 *seq.*

¹⁵ *Cf.* W. T. Bush, *Value and Causality*, this JOURNAL, Vol. XV., pp. 85-96.

I. REAL VALUES (attaching to objects that exist).

1. Immediate, or independent (attaching to objects valued directly).
2. Instrumental, or dependent.
 - A. Conditional (when real instrumentality exists, but is not recognized).
 - B. Actual (when instrumentality is recognized).
 - a. True (when valuing of object is mediated by a true judgment of instrumentality).
 - b. False (when meditated by a false judgment).

What I call "conditional instrumental values" are in all cases *actually instrumental*, by definition. They are not *actual values*, however, because not valued in the absence of a judgment of instrumentality, which is required to convert a mere disposition into an actual valuing act. What I call "actual instrumental values" may not be *actually instrumental* in all cases; but if judged to be instrumental, whether truly or falsely, they then have *actual value* because actually desired.

A second table of ideal values, would be as follows:

II. IDEAL VALUES (attaching to objects that are not real).

1. Immediate, or independent.
2. Instrumental, or dependent.
 - A. Conditional (lacking, for what does not exist can not be the cause of anything).
 - B. Actual.
 - a. True (lacking, for there can be no true judgment of instrumentality when the instrument does not exist).
 - b. False (the only case of instrumental ideal values).

In the case of a false, actual, instrumental, ideal value, the object is actually valuable because it is (1) believed real (falsely), (2) judged instrumental (falsely), and (3) actually valued because so judged.

A third table, of the *real* values of *belief*, is necessary. For behaviorism belief is a positive reaction to a proposition, and disbelief is a negative reaction. Belief in God, for example, is an acceptance of, or a positive organic attitude towards, the proposition, God exists. Disbelief is a rejection of, or a negative attitude towards, the proposition. Beliefs are psychological, *i. e.*, behavioristic, entities, and propositions are not. Strictly, when such a distinction is made, it is only propositions that may be true or false, while beliefs are only positive or negative. But common usage jus-

tifies one in calling a belief in a true proposition a true belief, and a belief in a false proposition a false belief. Furthermore, disbelief in a true proposition would be the equivalent of a false belief, though disbelief in a false proposition might, or might not, be the equivalent of a true belief. For the purposes of the theory of knowledge, the terms "belief" and "judgment" are practically interchangeable. In the philosophy of religion, however, I prefer the term "belief," since it suggests a more permanent and stable reaction of the organism.

In the case of objects merely imagined, but believed to be real, the objects of belief are unreal, but the beliefs themselves, as psychological subject-matter, are real. So there would be a third table of real values, like the first table except for the limitation of the objects to beliefs themselves:

III. REAL VALUES OF BELIEF

1. Immediate, or independent (when one believes, and likes to believe, just for the sake of believing, if there be such a case).
2. Instrumental, or dependent.
 - A. Conditional.
 - B. Actual.
 - a. True.
 - b. False.

These tables of values may be further elucidated through application to the chief religious objects in the higher religions. According to James's psychological study of the actual religious experiences of individuals of strongly marked religious character,¹⁶ the chief objects of religious interest and belief in the higher forms of religion are the following four: (1) God, as a more or less personal being; (2) human souls as real and significant; (3) the permanent significance of the human soul, *i. e.*, personal immortality; and (4) freedom (though not, to be sure, in all forms of the higher, redemptive religions), or rather indeterminism, since the term "freedom," from its philosophical associations, means, according to James, "soft determinism,"¹⁷ which is still genuine determinism even though "softened" by its idealistic setting.

God is the chief object of belief in most forms of the higher religions. Buddhism is no exception, for in actual practise Buddhism is not atheistic, the Buddha himself being deified; and in the more philosophical form of Buddhism the law of Karma, which is the moral order of the universe, would pass for a god. "*Some outward real-*

¹⁶ See *The Varieties of Religious Experience*, and *The Will to Believe*.

¹⁷ See Ch. V., "The Dilemma of Determinism," in *The Will to Believe*.

ity," James says,¹⁸ "of a nature defined as God's nature must be defined, is the only ultimate object that is at the same time rational and possible for the human mind's contemplation." As to the nature of God, James says:¹⁹ "It is essential that God be conceived as the deepest power in the universe; and, second, he must be conceived under the form of mental personality. God's personality is to be regarded like any other personality, as something lying outside of my own and other than me, . . . whose existence I simply come upon and find. A power not ourselves, then, which not only makes for righteousness, but means it, and which recognizes us." God, regarded as a personality, is obviously desired as an end, like a human personality, and not merely as a means. In the higher religions God is actually so regarded, though no counterpart of this is discoverable in the lower, nature religions.

God would, however, if he existed, be also a means to other ends. He would guarantee the realization of the highest human ideals. First of all, he would guarantee personal immortality, which, according to James, "is one of the great spiritual needs of man."²⁰ "The difference in natural 'fact' which most of us would assign as the first difference which the existence of a God ought to make would, I imagine, be personal immortality. Religion, in fact, for the great majority of our own race *means* immortality, and nothing else. God is the producer of immortality; and whoever has doubts of immortality is written down as an atheist without further trial."²¹

The human soul is an object of vital concern in most forms of the redemptive religions. For example, in orthodox Christianity it is the sinful soul that needs salvation, and the Buddhist salvation from rebirth is meaningless unless there is a soul that is reincarnated, though Buddhism tries to deny the reality of the soul while still believing in reincarnation.

Although a belief in and a desire for indeterminism are not universal in the higher forms of religion, James classes indeterminism among man's "spiritual" needs. It enhances the significance of the self. The mechanical chain of events in a naturalistic scheme, which denies individual initiative, fails to satisfy, according to James, the actual desires of most persons. The "soft determinism" of monistic idealism also denies any real individual creativeness in the act of choice. For absolute idealism, "our wills are [not] ours, to make them Thine;" they are only "Thine." Pluralistic idealism

¹⁸ *The Will to Believe*, pp. 115, 116.

¹⁹ *Ibid.*, p. 122.

²⁰ *Human Immortality*, p. 2.

²¹ *The Varieties of Religious Experience*, p. 524.

of some sort would seem to be what the majority of the religious portion of humanity desires. There is a prominent exception, Calvinism, which denies indeterminism; but James speaks of the unsatisfactory character of Calvinistic doctrine for most religious persons, and says,²² "A God who gives so little scope to love, a predestination which takes from all endeavor all its zest with all its fruit, are irrational conceptions, because they say to our most cherished powers, There is no object for you."

It now remains to classify the above-named objects of religious belief in respect to the sorts of value attaching to them. God, regarded as real, would have, first of all, an independent, or immediate, value in the higher religions. For all forms of mysticism the ultimate cosmic reality possesses immediate value. God would satisfy the believer's intellectual curiosity as to the first principle of the universe, his social desire for a great Friend above all human friends, and perhaps his esthetic interest. God would also have an instrumental, real value by guaranteeing the final attainment of the goal of man's highest endeavors. When St. Augustine prays, "I seek Thee in order that my soul may live," God is regarded by him as having instrumental value; and then, when St. Augustine speaks of God as the supreme good, the object of his belief is invested with immediate value. God, if real, would always have at least *conditional* instrumental value, being always instrumental in some direction; and would possess actual instrumental value when actually valued because judged instrumental. The judgment that mediated the valuing might be either true or false, for, though God is assumed in this classification to be real, the believer might judge him instrumental in cases where the relation of instrumentality did not hold.

It is doubtful whether the soul ever possesses immediate value, unless it is in the case of some ideal of future selfhood that one desires to realize. In such a case the "ideal" future self would be regarded as real, and hence possessing a real, immediate value, since it is assumed in this classification to be realizable sometime, while the ideal values of Table II. are assumed to be purely imaginary and never realizable. The soul, however, is more important for the instrumental value attaching to it, as a condition, *e. g.*, of immortality. Personal immortality probably never possesses immediate, real value, but is only instrumental to the rejoining of departed friends and to the fulfilment of those purposes that death, if final, leaves incomplete. Indeterminism has only instrumental value, being a means to the desired freedom of choice. The soul, freedom, and immortality, regarded as possessing instrumental value, would

²² *The Will to Believe*, p. 126.

possess only conditional value in certain cases, when actually instrumental, but not recognized as such; and actual value in other cases when actually valued because either truly or falsely judged instrumental.

So far I have assumed for the purposes of my classification that the religious objects in question are realities. If assumed to be unreal, they would be classified differently, in Table II. God, if unreal, would possess ideal, immediate value if believed in and valued directly. Being assumed unreal, God could not be actually instrumental. Hence he could never have what I have called conditional, instrumental, ideal value. He could have actual, instrumental, ideal value, however, when judged, falsely, of course, to exist, and to be instrumental to desired ends. The soul, immortality, and indeterminism would not possess immediate ideal values except in the one possible case of the soul, corresponding to the immediate real value of the soul as noted above. Of the instrumental ideal values, false, actual, instrumental values are the only ones that these objects could possess.

The determination of the reality of the objects of religious beliefs is a metaphysical problem. But it would be possible to construct, from the point of view of the outside observer of religious behavior, a philosophy of religion wholly upon the fact and the value of religious belief, without raising the metaphysical question of the existence of the objects of belief, or even if we assumed the unreality of such objects. Religion may perhaps be too good to be true. But it is a fact that there exists in many persons belief in religious objects, so I shall now classify in Table III. the real values of religious belief, regarded as a psychological, or behavioristic, object, and viewed apart from the objects of belief.

Belief could hardly possess immediate, or independent, value, except in the case where one believes in God, and likes to believe, just for the sake of believing, were there such a case. Though it is true that probably all religious believers are glad that they believe, still for most people the liking to believe in God is not a sufficient basis on which to adopt the belief. Believers normally believe in God because they think he exists; though they may as an afterthought value their belief, and pity the unbelief of others. The more significant values of religious belief, however, are instrumental values.

The most important instrumental value of belief in the higher religions is of a moral sort, even in the redemptive religions that are beyond the stage of the religions of the law. Religious belief is instrumental in many cases to higher standards of personal conduct than would otherwise be attainable. A further value is the hygienic,

or therapeutic, value of religious belief. This again is a case of belief possessing instrumental, real value. If belief in God makes one happy, and if one likes to be happy, then religious belief is a real means to this end. If, through making one happy, religious belief benefits one's health, and if one values good health, then again belief has an instrumental value. In the case of belief both as hygienic and as moral in its effect there is real instrumentality and therefore belief possesses real value in such cases—value of the conditional sort when the instrumentality is not recognized. When the instrumentality is recognized, and the belief is actually prized on that account, then the belief has true, actual, instrumental value; and a belief would have false, actual, instrumental, real value when actually valued because judged instrumental to something of which it was not actually a condition. It is chiefly through the moral and the hygienic effects of religious beliefs that they come to possess survival-value, and to be an important factor in the struggle for existence.

III

Returning now to the pragmatic fallacy, we see that it relates chiefly to what I have called the conditional, instrumental, real value of religious belief. The survival-value of religious belief is a case of *conditional* instrumental value, except in those cases where the biological utility of belief is recognized, and where the value becomes actual as value. The valuable belief need not have a "conscious relation to biological survival," as Professor Brightman seems to think,²³ in order to come within the category of values. The instrumentality to a directly valued object is the essential thing. The pragmatic fallacy consists chiefly in passing from the conditional, instrumental value of a belief to the truth of the belief, and in arguing that a belief, because possessing survival-value, must, therefore, be true.

Both Professor Brightman and Professor Moore criticize what I have called the fallacy of false attribution, the fallacy of attributing the religious experience, so-called, to "higher," supernatural forces in cases where the experience is merely physiological in source—where it is from "below" and not from "above." Professor Brightman says that "it is rigorously logical to say that an event has a psycho-physiological cause, and also that the event is a divine act."²⁴ Similarly Professor Moore says:²⁵ "The alternative is not—Are these experiences subjective or objective, physiological or di-

²³ See *loc. cit.*, p. 72.

²⁴ *Loc. cit.*, p. 76.

²⁵ *Loc. cit.*, pp. 77, 78.

vine? . . . Rather, the question is, Are they *also* objective and spiritual?" Both would maintain, as Professor Brightman explicitly does, that every event "is a manifestation, an expression, an act of the divine," and that "Kipling's camel-'jims' were divinely caused."²⁶ The difficulty with such a view is that if every event is called divine, then the term "divine" ceases to have any meaning at all, and argument about it becomes useless. It then becomes impossible to single out a field occupied by religion. That which applies to everything elucidates nothing. Moreover, belief in the universe as explained in the naturalistic terms of scientific evolutionism is not a religious belief, and can not be made into a religious belief simply by substituting the term "God" for the term "physical universe." To explain the mystical experience, for example, as the Freudians do, in terms of sublimation of the sex instinct, is to substitute a naturalistic explanation for the religious explanation of the mystics themselves; and I submit that any religious individual would cease to regard himself as religious, and in fact cease to be religious, if he came to accept the naturalistic explanation of his so-called religious experiences.

Professor Moore admits that "the belief that God is experienced is a doctrinal *interpretation* of mystical experiences,"²⁷ not a fact, but the interpretation of that fact. He says, however, that "precisely the same thing is true of physical experiences."²⁸ But, granting this, we are confronted with the fact that the naturalistic interpretation of human experience, if accepted, contradicts the religious interpretation to the extent that, if the person having the "religious" experience gives to it a naturalistic interpretation, his former religious reading of the events becomes psychologically impossible.

Criticism of the pragmatic fallacy and the fallacy of false attribution that would undermine them must first meet them on their own ground. As I originally defined them, and as I still maintain them, they stand as genuine and frequently encountered fallacies in the logic of religion.

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²⁶ *Loc. cit.*, p. 76.

²⁷ *Loc. cit.*, p. 78.

²⁸ *Loc. cit.*, p. 78.

REVIEWS AND ABSTRACTS OF LITERATURE.

Henricus Regius, een "Cartesiaansch" hoogleeraar aan de Utrechtsche hoogeschool. M. J. A. DE VRIJER. 's Gravenhage: Martinus Nijhoff. 1917. Pp. xxii + 221.

Henricus Regius (Hendrick de Roy), usually mentioned in the histories of philosophy, along with Rennerius, as one of the early followers of Descartes, was born in Utrecht in 1598. From 1638 until his death in 1679 he was professor of medicine in the University of Utrecht, which was founded by the city fathers of the ancient bishop's see in 1636. The monograph of Dr. De Vrijer is concerned with the question as to whether Regius was indeed a disciple of Descartes. The result of his investigations appears to be that, whereas Regius was unquestionably strongly influenced by his great contemporary and derives his principal claim to the interest of posterity from his importance as an expositor of Descartes's "new thought," he differed from Descartes in such fundamental respects that he should not be characterized as a "Cartesian."

From 1609 until 1621 there was a break in the eighty years war of the Dutch provinces against the King of Spain. During that time many of the internal quarrels, of which the fire had been smoldering for a long time, broke out in the open. The bitter fight between Gomarists and Arminians, although ostensibly a squabble between two professors of theology in the University of Leiden, was fundamental in character. It was linked on the one hand with the quarrel between the autocracy of Prince Maurice and the aristocracy under the leadership of the counselor of the province of Holland, Johan van Oldenbarneveltdt, who paid for his convictions on the scaffold in 1619. On the other hand it was a forerunner of the struggle between the Aristotelians and the exponents of the "new thought" which went on throughout the seventeenth century.

The detailed account which Dr. De Vrijer gives of this struggle as it manifested itself within the philosophical faculty of the University of Utrecht seems to the reviewer the most interesting part of the book. To it are devoted about 80 out of a total of 220 pages.

When Regius came to the University of Utrecht in 1638, he had behind him many years of study, first in law and then in medicine, an extended sojourn in France and Italy, and a considerable period as a practising physician. While practising medicine in Utrecht from 1636 to 1638 he came in contact with Rennerius, the first professor of philosophy there. His devotion to theoretical studies led him to gather about him a group of friends whom he acquainted with the results of his investigations. This established his reputation as an exponent of the new points of view in the field of natural

philosophy. He guarded himself against attacks from the Church by subscribing without reserve to the whole of revealed Christianity, as interpreted by the synod of Dordrecht, not as a result of his scientific inquiries, but simply on the basis of the Scriptures. Once having done this, he did not allow his religious professions to interfere with his philosophical thinking. Within the University, after the death of Rennerius in 1639, he did not find much support. The theologian Gisbertus Voetius, the philosopher Senguerdus and others opposed every departure from accepted Aristotelian doctrine. Most of the controversies between the two sides were fought out at the defense of theses, now usually little more than a formality, but then an important element in the academic life. Characteristic of the situation is the following incident: When in December, 1641, Regius had one of his students defend the thesis that "the union of soul and body is a unity not essential but accidental" (*non fit unum per se sed per accidens*), Voetius, who was then rector magnificus of the University, replied by having his pupil, Lambertus van den Waterlaet, take the position that the thesis of Regius was both objectionable and without sense. He made use of this same occasion to declare that "the rotation of the earth is in conflict (1°) with the Scriptures, and (2°) with reason. The first follows from Joshua, 10:12, Ecclesiastes, 1:4, and Psalms, 19:5, etc.:" Voetius added that those who were dissatisfied with the old philosophy and looked to Descartes for light were like the Jews who still look to their Elijah to guide them in the path of truth. Through the influence of Burgomaster van der Hooek, a friend of Descartes, Regius succeeded in getting these theses made public as representing the views of Voetius only and not of the whole theological faculty: the original title had been "*Corollaria admonitoria ex auctoritate S. S. Facultatis Theologiæ*." In 1642 Regius replied with a "*Responsio seu notæ in appendicem ad corollaria theologica-philosophica*," in which his opponents were rather roughly handled. Upon the advice of Descartes, to whom the manuscript of the "*Responsio*" had been submitted, the most severe strictures had been left out; Descartes wrote Regius a very extensive letter in which he outlined in detail the reply to be given Voetius. Notwithstanding these precautions, the academic senate condemned the "*Responsio*" and asked the city fathers to suppress the publication, on the grounds that it had been printed by a Catholic and published by an Arminian! Regius was ordered to limit his teaching strictly to medical subjects, and in the oration at the close of his rectorate in 1642 Voetius expressed the hope that "the philosophy of Descartes which had expected to gain the leadership had been banished from the University, never, with the grace of God, to return again."

But the magistrates of Utrecht did not maintain their edict against the teaching of Descartes. "They protested . . . and they appointed Cartesian professors. These accepted all the declarations, and used peripatetic books, but interpreted them in accordance with the fundamental ideas of Descartes." Regius and his pupils continued to be the defenders at the University of Utrecht of the new philosophy. The struggle against the Voetians kept in the background for a long time the fundamental differences which existed between his views and those of Descartes. To Voetius's biblical arguments for the existence of God, both men objected. But the ontological argument of Descartes was equally unacceptable to the materialist Regius. And gradually their differences became more clearly defined. To show what they were, how they developed and why the historians have so largely ignored them, is Dr. De Vrijer's principal purpose.

The source of information is found in letters written from 1638 to 1645. Of those of Descartes to Regius, nineteen are contained in the correspondence of Descartes published in 1657 by Clerselier. Those of Regius to Descartes have apparently never been published in full; their contents can only be inferred from references and extracts found in Baillet's *Vie de Descartes* of 1691.

When the *Meditationes de prima philosophia* appeared in 1640, Regius was at first very enthusiastic. But in a short time his materialistic conceptions led him to take issue with Descartes's argument for the existence of God. He wrote "that from the notions of wisdom, power, goodness, quantity, *etc.*, within us, we form the idea of infinite or at least indeterminate wisdom, power and goodness, and of other perfections, which are attributed to God." To this Descartes replied: "I am not of such nature that I could by my thinking extend to infinity those perfections which are present within me in insignificant form, unless we took our origin from that Being in which they are indeed found in infinite degree." Regius had contended, moreover, that "every untimely judgment depends upon the acquired and inborn temperament of body;" to which Descartes objected, saying: "In this way the complete freedom of the will to improve this judgment would be eliminated; and, if it does not do so, the mistake which arises therefrom would be a shortcoming on our part, but a pure negation, as far as God is concerned." The fundamental differences between the two men come out very sharply here. Regius's position was purely materialistic; thinking is for him a certain activity of the brain. Dr. De Vrijer suggests with some hesitation in a footnote on page 102, that Baillet purposely omitted the letters which deal with these questions in order to minimize Regius's significance as an independent thinker.

The crisis came in 1645 when Regius was preparing to publish his *Fundamenta physices*. He had sent the manuscript to Descartes and the latter strongly disapproved of its publication. "I must say frankly," so Descartes wrote, "that I believe it to be of no use to you to publish anything in the field of philosophy, not even in the domain of physics. In the first place because your magistrate has prohibited your teaching a new philosophy, both privately and publicly; and you would therefore give your enemies sufficient cause to have you removed. . . . Furthermore because I do not see that you can gain any praise from those things in which you agree with me, because you do not add anything of your own, unless it be order and conciseness, which two qualities will be criticized, I believe; for I have not seen any who disapproved of my order, nor any who did not accuse me of too great conciseness rather than of prolixity. The rest, in which you differ from me, is, in my judgment, worthy of blame and reproach, but not of praise and I repeat emphatically that I must strongly dissuade you from publishing this book." It was published, however, in 1646, with a dedication to Prince Frederick Henry of Orange, a great admirer of Descartes. In his reply to the letter from which we have quoted, Regius defends his position and criticizes Descartes: "You may be less surprised at my attitude, if you know that many people of mind and power have frequently confessed to me that they had too good an opinion of your mind to believe that at bottom your opinions about the soul were not different from those which go by your name. And not to hide anything from you, I must say that there are many here who believe that you have discredited your philosophy by the publication of your metaphysics. You promised things which are clear, certain and evident; but, so they contend, it is only obscure and uncertain." The verdict of history has not been in favor of Regius. Those elements in his philosophy which differed from the views of Descartes were ignored and attention was directed to its similarity with Descartes's *Principia philosophiæ*, which appeared in 1647; he was accused of plagiarism. Dr. De Vrijer tries to correct this erroneous view of Regius. He shows him to have been a man who had many shortcomings no doubt and who owed a very great deal to Descartes, but who was capable of independent thinking and who had the courage to maintain his own opinions where they differed from those of the master.

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JOURNALS AND NEW BOOKS.

REVUE DE METAPHYSIQUE ET DE MORALE. January-February, 1918. "*Le contrat social de Rousseau*" (pp. 1-23): É. DURKHEIM. - A very important contribution to the history and interpretation of Rousseau's thought. *L'interaction de l'esprit et du corps* (pp. 25-59): H. WILDON CARR. - A combination of two papers previously published under the titles "The Moment of Experience" and "The Problem of Recognition." *L'Art et la science* (pp. 61-73): V. DELBOS. - Art will not be supplanted by science, for it has the function of correcting and tempering the spirit of observation. *Les mesures et notre connaissance du monde extérieur* (pp. 75-81): H. BOURGET. - An exposition of the uncertainty in philosophical generalizations concerning nature based on measurements that in the nature of the case can never be exact representations of the real. *Études critiques. Les souvenirs de Lord Morley*: ELIE HALÉVY. *Questions pratiques. La société des Nations*: G. AILLET. .

Bosanquet, Bernard. *Some Suggestions in Ethics*. London: Macmillan and Company. 1918. Pp. viii + 248. \$1.90.

Ingenieros, Jose. *Proposiciones relativas al Porvenir de la Filosofia: Presentadas a la Academia de Filosofia y Letras*. Buenos Aires: Talleres Graficos Argentinos de L. J. Rosso y Cia. 1918. Pp. 149. \$1.00.

Macculloch, John Arnott, and Machal, Jan. *The Mythology of All Races: Celtic and Slavic*. Vol. III. Boston: Marshall Jones Company. 1918. Pp. x + 398. \$6.00.

NOTES AND NEWS

THE first number of the *Revista de Psiquiatria y Disciplinas Conexas* (Redaccion y Administracion: Gremios 435 Altos-Lima, Peru) is dated July, 1918. Its 50 pages contain

La Hipocondria en el siglo XVIII.,

El Mutismo,

Acerca del Infantilismo,

La nuevo faz de la psicologia

normal y clinica,

Libros y Revistas,

Publicaciones recibidas,

Psicopatografias.

Autor anonimo

Luis D. Espejo

Hermilio Valdizan

Honorio F. Delgado

At the University of Michigan Associate Professor J. F. Shepard has been made professor of psychology, and Dr. H. Foster Adams has been advanced from instructor to assistant professor of psychology.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

TRUTH AND SURVIVAL VALUE.

AN editor with a sense of humor can sometimes produce an exquisitely funny effect by the mere juxtaposition of the views he publishes. Thus if one writer is rash enough to declare that "no sane person can possibly believe such an absurdity," he can open his columns to another who vigorously advocates this same "absurdity." I somewhat suspect, therefore, that the arrangement of Vol. XIV., p. 653, was not wholly fortuitous. For on that page the conscientious reader may find, at the end of a somewhat complicated and thorough argument of mine, the conclusion that it is possible to arrive, "by a purely Aristotelian route at the humanist contention that 'truth' and 'falsity' are fundamentally values," while a few lines further down he is assured in the opening paragraph of Professor W. R. Wells's article that "a confusion between the value and the truth of religious beliefs is so characteristic of the pragmatic way of thinking in the field of religion that it may properly be labeled the pragmatic fallacy." Thus what one philosopher regards as the conclusion of a cogent train of reasoning is treated by the other as a mere confusion,¹ and the skeptic and the scoffer obtain another signal

¹ Another, very similar, example occurs in the next number (Vol. XIV., No. 26). In the course of what appears to me a very confused and confusing discussion about the pragmatic theory of values, one of the disputants declares that "the fundamental incoherence of the pragmatic value theory reaches its culmination in its discussion of the fundamental issue 'value and existence.' When the pragmatist says, often in the same breath, existence is a value and value is an existent, is it not just because here, as elsewhere, he moves back and forth within the magic circle of the 'specific situation'?" (p. 705): the other retorts "the statement that 'existence is a value and value is an existent,' which Professor Urban attributes to pragmatists, is . . . pragmatically quite meaningless, and I have been unable to locate it in pragmatic literature" (p. 712). Now both of these pronouncements must be painfully embarrassing to one who has been arguing ever since 1897 that truths are essentially values and that no absolute antithesis between value and fact is tenable. Nevertheless candor compels me to supply Professor Urban with the references to confute Mr. Schneider withal. He should look up *Humanism*, pp. 55, 162-163, and this JOURNAL, Vol. XII., p. 686, and Vol. XIV., pp. 456, 653. In return for this service he might tell me what, if

illustration of flat contradiction among the doctors of philosophy to justify their doubts whether philosophy is, or can ever become, a science.

Now as all will agree that such incidents are far too common in philosophic literature and that it would be a good thing to check their repetition, I propose, not merely in the interests of pragmatism, but for the credit of philosophy in general, to examine the "confusion" Professor Wells has detected, and to endeavor to clear away this particular stumbling-block in the path of the student who is willing to explore a somewhat wild and unfrequented, but highly interesting, portion of the philosophic field. It will, I think, speedily appear that the "confusion" is not to be laid to the charge of pragmatism, but is a natural growth of the human mind which has its roots in one of the deepest and most pressing of the problems that beset it.

By way of approach it will be well to recall that pragmatism professes to be, in the first instance, a new analysis of human knowing. Its specialty, which has rendered it so unpopular in academic circles, has been to drag ruthlessly into an unwelcome glare of publicity a large number of psychological procedures of the human mind which do not look very respectable or flattering to human vanity, and had been overlooked, or tacitly ignored, by the traditional accounts of knowledge. It was widely felt, therefore, that it was not *good* thus to uncover the *parties honteuses* of the human mind, and that pragmatism was playing the *enfant terrible* in a way no zeal for *truth* could excuse.

Among the problems thus dragged to light, though apparently one of the most respectable and innocent of them all, was that of the connection between truth and value. The unsophisticated empiricism of the pragmatists observed that though in the abstract these notions seemed to be quite distinct, yet there existed a close connection between them in fact, and that all but the most critical thinkers (to wit, themselves) were wont to pass, in the most facile and apparently inconsequent way, from desires, wishes, postulates and judgments of value to affirmations, confident beliefs and other forms of truth-claim. Here then was a new problem, a procedure so common as to be almost universal, which had never been adequately studied. What was its explanation or its justification? The old logicians, if they had noticed it at all, had dismissed it with a few anything, he means by the "fundamental incoherence" of my theory. And, like Mr. Schneider, I can not for the life of me see what it has to do with "the magic circle of the specific situation." In the specific situation I perceive, there is no magic circle, but only an urgent need to clear up the relation of truth to value.

words of cursory condemnation, and had simply taken it for granted that nothing of logical interest or value could result from such a process. But to the pragmatists the case did not appear quite so simple; they insisted on its anomaly, importance and significance. Their reward has been to have this common human failing specifically named after them, "the pragmatic fallacy." That seems a little unjust, but no doubt they deserved the fate of all innovators. If they did not wish to be misunderstood, they ought to have made their point clear to the meanest intelligence. They should have carried their analysis much further. They should have explained, more precisely and in exhaustive detail, the ways in which this common "confusion" arises, the part it plays in the struggle for existence of opinions, and the influence it has had over the selection of what are now the accepted "truths": and it is as a tardy and partial contribution to such an explanation that this paper may best be regarded.

It is obvious, in the first place, that it is quite impossible to separate the topics of truth and value entirely. So soon as it is noticed at all that every truth has to be born into the world, *i. e.*, has to have a genesis in a mind that is prompted to affirm it, it is clear that this mind must attribute *value* to it. It must have discovered its "truth" in a purposive process of attention, research or inquiry, which interested it and promised a *valuable* result.

The truth itself moreover must always include a logical claim to *greater value* than that possessed by any rival, *i. e.*, any alternative judgment about the same subject. For had a better (*i. e.*, more valuable) judgment been possible, it would inevitably have been preferred. Not that we need contend that *all* the logical possibilities are always present to consciousness. There are often, and indeed usually, psychological alternatives, out of which the judgment made is chosen, but that there should be is not a *sine qua non*, and does not affect the logical character of the judgment as the product of a choice of the best available. For in cases where the maker of the judgment has decided hastily and without due consideration of alternatives, these may be mooted subsequently, and if any of them then appear to him to be superior in value, he must withdraw his original judgment and substitute the better one. Judgment therefore always implies a choice logically, even where there has been no psychological consciousness of choosing.

This analysis, which is formal and quite general, evidently applies to all judgments or truth-claims, irrespective of whether they are true or false in fact, and is a demonstration that there is a value-claim in every truth-claim. The fact that the claim is *latent* should be for philosophy a reason, not for denying, but for emphasizing, it.

This conclusion naturally leads on the question—what then is the connection between value and truth? Once this question is raised a number of reasonings will be found to converge upon the answer that the true is a *species* of the genus “value,” along with the right, the good, the beautiful and the pleasant, whereas the false is the term for the corresponding negative value, like the wrong, the ugly and the painful. It then easily follows that logic is (or should be) the study of the value-claims which occur in cognitive operations, and that “truth” is to be defined as “logical value,” while “error” and falsity fall into line as the terms for the negative values which frustrate the attainment of their positive counterparts.

So far everything has been plain sailing. The first complication arises when we observe that value-claims are not always valid and that the value claimed is not always possessed; or, in other words, that what claims to be true may be false and be recognized as such by some, or even (retrospectively) by all. For we now get a number of parties to the case, and a discrepancy or dispute between those who claim the value and those who reject the claim. No logical analysis, therefore, which does not *distinguish* between these two views or attitudes can possibly be adequate. There is a logical dispute in which both sides claim to be right, and the logician has to arbitrate; his first duty therefore is to listen to both sides, and not to prejudice his function by prejudging the issue. The first thing he should say, therefore, is that when a judgment is in dispute it can no longer be called “true” or “false,” simply; it is “true” for the one side, “false” for the other. It is necessary, therefore, to *distinguish the persons* who are concerned with it, and to specify *for whom* it is “true” or “false.” Moreover, since the judgment can no longer be described as true (or false) without begging the question, the logician, as a neutral adjudicator in a cognitive dispute, should most carefully avoid doing so. If he does not, he falls into what may be called the *Fallacy of Ex Post Facto Wisdom*, to which all logic has habitually been addicted, because it has always assumed that the personality of the knowers could be abstracted from in giving an account of knowledge. Professor Wells falls into this fallacy when he declares that “in many cases beliefs that are clearly false still have obvious value for those who hold them as true.”² Here “clearly false” is evidently an *ex post facto* description. When the incriminated belief was formed it was clearly not held to be “false,” but believed to be “true”; its falsity was discovered later. Hence even if its falsity is now acknowledged, and its former advocates are now convinced of the erroneousness of their belief, the description

² Also on p. 654, “it is a fact that false religious beliefs have possessed value in the course of history.”

of it as "clearly false" transfers to the original judgment a valuation due to subsequent enlightenment, and confounds the cognitive situation before and after the tests which upset the original truth-claim. It is clearly wisdom after the event.

However it is not clear that Professor Wells was thinking of a case where the author of an "error" himself corrected and retracted it. He appears to be thinking rather of cases where conflicting valuations continue to coexist, and "clearly false" beliefs "*still* have obvious value for those who *hold* them as true" (not "*held*"). If so, he is committing a second offense, which may appropriately be labeled the *Fallacy of Confounding the Persons*. This fallacy also is very common in the traditional logic, and ought to be as serious a sin in logic as in the Athanasian Creed. For it ignores the essential fact that where there is a *dispute* about a belief there are *two* parties to it, whose positions logic should distinguish. If we make bold to disregard those who are still inquiring, doubting, hesitating or vacillating about the belief, and consider only the primary parties to the dispute, there are (1) those who believe it, and (2) those who don't. It is only to the former that the belief can have "obvious value"; and they of course also believe it to be true, *i. e.*, to have *truth-value*. The others, for whom it is clearly false, do *not* attribute truth-value to it, and do not think that the value it has for its believers is truth-value. For themselves it has *no* value; though, if the believers are in a great majority and insist on conformity, it may be valuable to *pretend* to believe it; the value-claim of this pretense, however, is for export only. The most a disbeliever could say to himself would be, "if only I could believe it to be true, it would make me happier" (or better). But this value he could not attain so long as he denied its truth, and, until he has sunk deep into the mire of self-deception, he is well aware of it. Consequently we do *not* get in *either case* a real divorce of truth and value. For the believers this belief has truth-value, as well as other sorts of value; for the disbelievers what has happened is that a non-cognitive value has vitiated the intellect of the believers, or has been erroneously taken to be truth-value.

The chief reason why this situation has not been understood, and why it has seemed natural to hold that false beliefs are valuable, is that the rulers and teachers of mankind have made such extensive use of lies as an instrument of government. Desiring men to believe what they considered *good* for them (or for themselves), they have been in the habit of imposing on them beliefs which they themselves were often far from sharing. They thus fabricated an artificial divergence between the true and the good-to-believe, and extensively

debased the intellectual currency. Consequently, when pragmatism brought up the connection between truth and value as a scientific problem, it seemed to all such persons natural to regard pragmatism merely as a theoretic recognition of what they had been doing, as an avowed extension into philosophy of practises that had long been in vogue in religion and politics. I can remember that in its editorial comments on the second general election of 1910 the London *Times* declared that both sides had shown an unusual amount of "pragmatism," and that it would not accept correction when it was attempted to explain to its able editor that pragmatism was *not* a synonym for lying. But it is the mental confusion engendered by the prevalence of lying for a purpose which accounts for the widespread belief in a natural antagonism of the true and the good, and the conviction that "value has a field of its own"³ into which truth does not enter, will probably persist, even though the argument for the separation or complete independence of truth and value breaks down when the case is completely analyzed.

It breaks down, even if we draw Professor Wells's own conclusion from his premises, that since false beliefs may have value, "the argument so commonly used that, since certain beliefs possess value for the believers, they are therefore true, is seen to be unsound."⁴ For here again the persons are confounded. If we fill in the reference to those concerned, we can only infer, either that since the beliefs "possess value for the believers they are therefore true" *for them*, which is a tautology, or *for the others*, which is a *non sequitur*, and probably untrue. For why should a belief which is good for *A*, because he believes it, be good for *B*, who does not? If what is meant is that beliefs are like tonics and may be imbibed like medicines, and that *B* would benefit like *A*, if he would only take to *A*'s belief and try it, this should be stated plainly. It may put us back on the logical level of Mill's "village matron" who prescribed the cough-drops which had benefited her Lucy to her neighbor's Polly, when she had broken her leg: but it is to raise a new and different issue, that of the psychological art of growing beliefs, concerning which there is much to be said. And in any case *B* would *ex hypothesi* have had to abandon his former belief in order to acquire the new one.

Our analysis, so far, has come upon nothing that need constrain us to question the conviction that by the value of a belief is meant essentially its truth-value: but we have now to call attention to facts which may force us to regard this assumption as over-simple. If it is a fact that truths are a kind of value, we should be prepared to find that their kinship with the other sorts of value is recognized by lan-

³ *L. c.*, p. 653.

⁴ *Ibid.*

guage and that the vocabulary of valuation should be to a large extent common and interchangeable. Accordingly we find this to be the case. We no more hesitate to say that an argument is *good* and *right* (ethical value), and that a piece of reasoning is *beautiful* (esthetical value), than, conversely, that a statue observes the *true* proportions, or that an enemy's nature is *false*. Is this at last the proof of the "confusion" between true and good of which pragmatism is accused? But is it not precisely the pragmatists who have drawn attention to it? And is it a confusion at all, when its significance is properly understood? For it is merely a metaphorical transfer of the specific value-terms from one value to another within the *genus* value, and this is hardly reprehensible, at all events when it is done consciously. The philosopher who desires to censure the practise, must be told to quarrel, not with pragmatism, but with language, and warned that but few of his tribe have shown themselves capable of mastering language.

It seems more reasonable then to recognize these interchanges of the vocabulary of valuation, and to inquire whether they do not mean something. They clearly mean, at least, that all values are commensurable, like the different currencies, and that therefore an inquiry may be opened into their proper, or actual, *rate of exchange*. We may legitimately ask how much pleasure-value is the equivalent of how much ethical value, or how much truth should be bartered for how much beauty. For that truth is beauty and beauty truth in some way is evidently not all a man has need to know, if he is also a philosopher. But whether or not he succeeds in regulating the exchange, he can understand its theory and observe its practise. For that such exchanges do occur is practically certain, to any one who deigns to watch the ways of men and the vicissitudes of beliefs. What alone is doubtful is whether they amount to a proof of what we may call a real *vicariousness of values*.

Here the inquiry begins to get into deep waters, and the philosopher who has been accustomed to feel firm ground under his feet, and has scorned to cope with the flux by learning to swim, may be warned to get out of it, lest he should presently find himself in a hole and get out of his depth. Well may he feel his stationary reason beginning to waver in her seat, when she encounters the suggestion that one belief may seem so beautiful or so delightful that it is generally accepted as true, while another is so hideous and so repulsive that it can not be seriously believed at all by mortal man: but if truth and not edification be the aim of philosophy and the value which it covets, the inquiry must proceed inexorably. As a concession, however, to the human prejudices of (even the austere) philosophers, let us drop the religious illustrations by which this prob-

lem is traditionally illumined. They have the advantage of exciting popular interest; but they are naturally invidious, because they excite strong emotions, for and against; they are also clogged with much irrelevant detail, and above all, they are not essential and indispensable. The question at issue can be argued with much simpler and clearer examples.

Let us examine, therefore, some non-religious cases of beliefs whose truth-claim is rejected for non-cognitive reasons: (1) Why are men so loth to believe that their whole life is a dream? Certainly *not* because they can disprove this suggestion, and show it to be false. The suggestion is very old; it was familiar to philosophers in the time of Plato,⁵ and from that day to this it has never been disproved. All the attempts to do so have been signal failures. Hence the rejection of the belief can not rest on intellectual grounds. What it does rest on is hard to say. We may conjecture that it rests on nothing more substantial than the affront to human vanity and self-importance which is thought to be contained in the suggestion that everyday life is not so real and earnest as the commonplace and unimaginative are wishful to believe. But if any one can offer a better reason, he is assuredly welcome to try.

(2) A still more striking case in some ways is that of solipsism. Here the rejection of the belief appears to be quite universal; but the reason can hardly be intellectual. For though there are several logical refutations of solipsism which are more or less successful,⁶ they are not familiar even to philosophers, and it is plain that the plain man has not heard of them; the universal reprobation of solipsism therefore does not rest on him. Neither does it rest on ordinary pragmatic grounds. Solipsism is not an impracticable doctrine; it is quite a harmless belief in practise, if the solipsist refrains from assuming that he must know in advance all that the creatures of his creative imagination are going to do. And what right has he to assume this? The real reason for rejecting solipsism appears to be esthetic. It would be a hideously lonely world, in which *οἶος πέπνυται, τοὶ δὲ σκίαι ἀποσσοῦσι*, and the shock to our social instincts would be unbearable.

(3) But the crucial test, perhaps, comes in the case of pessimism. Again we get no intellectual refutation. In the mere matter of argument the pessimist can hold his own, and indeed generally gets the better of the optimist's reasons, though hardly ever of his bias. On the other hand, there is no optimistic argument which a resolute pessimist can not appropriate and pervert to his own ends. Nor is

⁵ *Theætetus*, 158B.

⁶ I have suggested one of them myself (*Humanism*, p. 249). It is the only one I can regard as adequate.

any pessimist ever converted against his will, and if he is convinced it is because he too feels the common human bias and at the bottom of his heart is as anxious as the optimist to believe that good may be the final goal of ill.

The real reason for the predominance of optimism and the rarity of pessimism is not rational, but biological. Pessimism constitutes the leading case of the discrepancy between truth-value and survival-value. In all its more pronounced forms the survival-value of pessimism is highly negative;⁷ it is a belief which is fatal to those who adopt it. In all but its most extreme (and fatuous) forms, on the other hand, the survival-value of optimism is positive, and though the amount of this value may often be exaggerated, it seems clear that optimism is an invigorating belief which tends to preserve, and indeed to increase and multiply, those who hold it. Hence all men are descended from those who have thought life worth living, and have inherited a bias in favor of optimism, and against pessimism, so strong that no truth-value can overcome it. Or rather their natural bias has so affected (dare we say, *vitiated*?) their intellect that it unhesitatingly and immovably affirms the truth-value of what is really nothing but the survival-value of the belief.

It follows that even if pessimism were true, its truth could never be established as a living belief in human minds. Pessimism may be taken as an extreme but typical example of a belief which has such negative survival-value that no amount of logical value could compensate for it and ensure its acceptance. The stronger its reasons were and the better it argued, the more it succeeded in convincing the reasonable who were open to conviction, the more certainly would it defeat the aim of its arguments. For the more certainly would it eliminate those who could feel the force of its argument, and the more it would strengthen the optimistic bias of the survivors; until in the end only those would survive who were too violently prejudiced, or too impenetrably stupid, to understand the case for pessimism.

It is clear then that pessimism can never be more than a sporadic phenomenon. A society of pessimists is a permanent impossibility of the cosmic scheme, even though the father of history has a pleasing yarn about the pessimistic customs of a Thracian tribe of his day.⁸ Among the Trausi, he assures us, it was the custom to condole with parents on the birth of children and to congratulate the chil-

⁷ It is quite compatible with this that a certain tinge of partial or conditional pessimism should be a reaction which the character of life naturally evokes in thoughtful minds and a practicable adjustment to its conditions, while extreme optimism, if acted on, would conduct to fatuities as fatal as those of ultra-pessimism.

⁸ Herodotus, Vol. 4.

dren on the death of parents. But this exception, if it was a fact, only proves the rule. The Trausi make their one and only appearance in history in this tale, and are never heard of again. It is evident that Herodotus must have snap-shotted their tribal pessimism just before it led to their extinction! But the lesson of their fate remains.

Do we not get then, in this case of pessimism, irrefragable proof of the power of other values to create truth-value? And was not pragmatism, though it did *not* identify survival-value and truth, quite right in tracing a connection between them and in refusing to declare survival-value utterly irrelevant to truth? Have we not discovered a fact of tremendous import? Must we not ask what limits can be set to its influence? If it is a fact that *some* truth-values are creations of survival-values, must we not ask how they are to be discriminated from the rest, and how much this fact should detract from their truth-value?

We shall have, moreover, to be cautious in our answers. For while on the one hand it would seem outrageous to hold that this makes *no* difference, we can hardly discredit survival-values altogether. The transition from *de facto* to *de jure* value is not a matter of course; but neither are they separated by an abyss. For if we utterly deny that it is rational and right to make this transition shall we not be setting up our private judgment against the laws of existence, and committing the very same offense as the pessimist? And will not our protest be as vain as his?

How vain is that, precisely? Is his protest logically worthless, because *he* is doomed to perish? Only, surely, if the logical standpoint is wholly absorbed into the personal—to an extent the extremest humanist may hesitate to take for granted. And even if that refutes the pessimist in the eyes of optimists, does it do so in his own? May not his elimination, which means his failure in the eyes of optimism, mean his success in his own? For he escapes from the life they value so differently; and what the optimist regards as his greatest loss he may account his greatest gain.

It is clear that there are many questions here which will have to be discussed with care, and many reasons why it should be wiser not to be too confident and absolute that survival-values can not determine truth-value. They plainly can in some cases, and the limits of their influence are quite indeterminate. It is even possible that ultimately and indirectly *all* truth-values are affected by the survival-value test. If so, it might even become necessary to equate truth and survival-value in principle, and to treat their apparent divergences as only superficial and temporary incidents in the consolidation of opinions. The matter cries out for further investiga-

tion. It is to be feared, however, that it will not get it. For it appears to be one of those questions which philosophers are reluctant to inquire into—for reasons not unlike those which render pessimism an unacceptable topic. These reasons do not appear to be *rational*; and if this is so, they will provide a further example of a belief whose “truth” is a value imputed to it, for reasons that are not intellectual. And it may be all the more valuable to urge philosophers to face such questions, and to undertake the analysis of such beliefs.

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SIXTEEN LOGICAL APHORISMS

I

A TRUE judgment and a false judgment have the same logical structure. This is of itself sufficient to show that an analysis of the forms of knowledge has no ontological significance. The nature of knowledge is the same, whatever may turn out to be the nature of the world. This position is one of armed neutrality, and stands ready to defend itself against both pragmatism and intellectualism.

II

All errors in epistemology may be reduced to one: the deliberate or unconscious confusion of the instrumentalities of thought with the objects of thought. Propositions which hold true of the former do not apply to the latter, and vice versa. The former are ideal entities (neutrals); the latter are reals. Even when the object of thought is an ideal entity, it is nevertheless a real with respect to the ideality by means of which thought apprehends it.

III

The subject-predicate relationship is universal—to judgments. All relations obtaining between the objects of thought of whatever kind, must and can be expressed, when known, through the subject-predicate relationship. This and all other noetic relationships constitute a neutral sphere, wholly indifferent in their unprejudiced transparency to the various real (anoetic) relationships which may be reflected through them.

IV

A thing both is and is not the sum total of its characteristics. A thing is described or known by its characteristics; but no sum or

organic/whole of characteristics can constitute a real. The difference is not a difference in quality, it is a difference in the mode of existence.

V

Whether any change takes place in the real world, and what significance such change may have, if any, is solely a question of fact. But antecedent to the determination of this question of fact there is a logical presupposition, *viz.*, that meanings do not change, and that it is possible for us to utilize unchanging meanings as instrumentalities of thought. Without granting the validity of this presupposition, it is impossible to assert that the above mentioned question of fact can be significantly determined. It follows evidently that the truth of the logical presupposition in question has no bearing upon the actual solution of the ontological problem.

VI

Is there a remedy for the evil in the world? Does human life point to a significant human destiny? Whatever may be the answer to these and other questions, says Royce, in the *Problem of Christianity*, the answer will necessarily have to be in the form of an interpretation, and will constitute an appeal to a community of interpretation assumed as real; that is to say, it will be in terms of common meanings (universals), whose possession is shared by members of an intellectual community. Whatever be the answer this presupposition holds, and is validly assumed even by the proposal of a false answer. Behold your answer! Amen.—The answer, such as it is, is irrefutable; but anyone who could be satisfied with such an answer to such a question must be inordinately stupid.

VII

There is a form of pragmatism which is simply intellectualism turned upside down. When you stand a man on his head you may indeed shake out some of the loose change from his pockets, but you do not transform his vices into virtues. All the vices of intellectualism are present in full vigor in its inverted form.

VIII

A mistaken zeal for continuity, so abstract as to annihilate the discontinuities which are as essentially a part of reality as its continuity, is the bane alike of intellectualism and of pragmatism. Intellectualism assumes that the characteristics of knowledge are the characteristics of reality; pragmatism asserts that the characteristics of reality are the characteristics of knowledge. The one, conse-

quently, abolishes change; the other, with equal consistency, abolishes, in misinterpreting knowledge, the *terminus a quo* and the *terminus ad quem* which makes the change real and significant.

IX

There are logical syntheses, and there are actual syntheses. The synthesis of the ideal and the real in consciousness is an actual synthesis, and can not be logically construed. It is given, and unless it is taken as given, it can never be explained. The given can be construed out of itself after it is given, but the giving of it can never be construed. Logical demonstration is not creation.

X

Knowledge is the apprehension of things as they are for the purpose of changing the things to suit ourselves, or of changing ourselves to suit the things; or else for the purpose of esthetic contemplation. But knowledge is not itself the process of change which it may serve to initiate. "An apprehension of things which changes them in the apprehension, is a misapprehension."¹

XI

If knowledge of objects is transformation of objects, both the fact and the nature of such transformation would have to be revealed by something which is not knowledge. This paradox is insoluble except through a repudiation of the presupposition.

XII

Modern critics of formal logic assert that it ekes out a precarious and not too honest livelihood by exploiting purely verbal distinctions. This category, "a purely verbal distinction," explains all. But nowhere is it explained what it is that constitutes a distinction purely verbal. Thus this category plays as ludicrous and anomalous a part in these logical discussions as the original whirling motion, or the primeval chaos, in Greek cosmological speculation. It was supposed to explain all, but was itself inexplicable.

XIII

Mr. Schiller has discovered a paradox in connection with the law of contradiction. The law excludes denial; and yet, another logical principle asserts that *omnis determinatio est negatio*. To put it down *in forma*:

¹ Quoted from Kierkegaard, with a slight modification.

Thesis—Affirmation excludes denial (of the same).

Antithesis—Affirmation includes denial (of the opposite). By omitting the words in parenthesis we are confronted with a paradox, and it becomes necessary to resort to a grandiose explanation (which does not explain). Why not allow the words in parenthesis to stand, and thus eliminate the paradox and the grandiose (and irrelevant) explanation?

XIV

I have discovered the following paradox in connection with Mr. Schiller's explanation of the laws of thought. Let me put it down *in forma*:

Thesis—Schiller affirms that the laws of thought are as a matter of fact contradicted by experience.

Antithesis—Schiller wills, nevertheless, that the laws of thought shall not allow themselves to be contradicted by experience. My solution of this paradox is simple, and while the solution might possibly be regarded as an affront to Mr. Schiller and a defiance of his logical insight, it could never by any possibility be described as an "affront to experience and defiance of change."

XV

Logical laws can not become the object of a free choice. To a free choice there corresponds the existence of real alternatives, and also of a conception of these alternatives. But no conception of significant alternatives is possible except on the basis of the prior validity of logical laws. To will a logical law is simply to acknowledge it, and the refusal to acknowledge it is intellectually suicidal; this is what is meant by calling such a law a logical necessity.

XVI

The effort to be bold and daring and brave in logical matters is a work of supererogation. When the sense of risk and adventure is lost from the actual life, it does very little good to introduce a shadowy substitute, dressed out in extravagant rhetorical terminology, into the sphere of logic and metaphysics. When youth is lost, it is little use trying to make oneself young artificially. Let the necessary remain what it is, the necessary; if our thought is not too hopelessly confused, the world will always be seen to have room for the highest daring of the free man.

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SOCIETIES

THE EIGHTEENTH ANNUAL MEETING OF THE WESTERN PHILOSOPHICAL ASSOCIATION

IN accordance with the action of the executive committee, the Western Philosophical Association held its eighteenth annual meeting at Northwestern University, Evanston, Ill., on March 29 and 30, 1918. Both the attendance and the interest manifested clearly testified to the wisdom of the decision to hold the regular meeting this year as usual and to provide place on the programme for papers on any subjects which members might wish to discuss. Of the Friday sessions, that of the morning was devoted primarily to ethical topics and that of the afternoon to papers relating to various phases of social reconstruction. In continuation of the afternoon's discussions and as the climax of the day's programme came the presidential address by Professor H. B. Alexander on the subject, "Art and the Democracy." This address was delivered in the Evanston Hotel in connection with a dinner and a smoker at which the members and visiting friends were the guests of Northwestern University. The morning of Saturday, following a breakfast at the home of the secretary, was devoted to four papers on logical and epistemological subjects and to the annual business meeting.

The association resolved that a committee be appointed to communicate to the American Philosophical Association a definite plan of federation of American philosophical associations, and to formulate an alternative plan (involving a change of name) for the reorganization of the Western Philosophical Association, to be submitted at the next annual meeting, in case the American Philosophical Association refuses federation; further, that the committee to handle this matter be composed of five members of the association, the retiring president, the secretary, Professor Tufts and two others to be agreed upon by them.

Action was taken whereby, beginning with 1919, membership in the association lapses automatically whenever the regular dues are unpaid for a period of three years.

The report of the Secretary and Treasurer indicated a membership of eighty-two, an expenditure for postage and printing during the year of \$12.86 with one item of \$9.00 as yet unpaid, and a balance in the savings and checking accounts of \$224.78. His requests for an authorization to invest in war savings certificates the money not needed for running expenses and for a committee to audit the accounts of the past two years and to report at the next meeting were acted upon favorably. Professors Ames and H. W. Wright were appointed as such a committee.

Elected to membership were: A. E. Avey, A. P. Brogan, G. W. Cunningham, L. R. Eckardt, D. T. Howard, J. A. Leighton, S. G. Martin, J. D. Stoops. Officers were elected as follows: President, H. W. Wright; Vice-president, E. S. Ames; Secretary and Treasurer, E. L. Schaub; additional members of the executive committee, J. F. Crawford, A. H. Lloyd, E. D. Starbuck, Norman Wilde.

Iowa City, Iowa, was determined upon as the place for the next meeting, the time of which was left to the discretion of the executive committee.

The following are abstracts of the papers read at the meeting:

The Sources of Coleridge's Philosophy: NORMAN WILDE.

Coleridge represents the Platonic tradition of English philosophy, as illustrated by the Cambridge men of the seventeenth century, and was only externally influenced by German philosophy, which helped him to formulate but did not contribute his ideas. The fundamental characteristic of his mind was his imagination, and his place in philosophy was that of a metaphysical poet.

The Moral Will: J. D. STOOPS.

The inherited action-patterns are the only sources from which can come the energy of volition. The will varies with the strength and organization of instinctive predispositions. Traditional ethics has estranged the will from these primitive action-patterns. But to build one's idols independently of instinctive predispositions is to leave in the mind subconscious trends whose suppression consumes the vital energies which ought to enlarge and not limit the will. The good will no less than the evil will receives its energies from instinctive predispositions. The good will is not an introverted will; it is an integrated will. Through integration the entire repertoire of instincts and emotions, organized by the reason, lends its momentum to the frailest aspiration. Rationalism, intuitionism, individualism have estranged the will from the older action-patterns which can alone furnish the outlines of the individual's relations to social institutions. The instincts of food, sex, gregariousness, workmanship, curiosity, play, do not limit the rational, moral will. They are the only possible conditions of its enlargement. Property, the family, the state, religion, vocation, knowledge, art, are rationalized expressions of innate action-patterns. A will which does not function with intelligence and loyalty in all these spheres of conduct is not an adequately developed moral will.

The Doctrine of the Good of the Whole: J. H. FARLEY.

Value or goodness is always a teleological affair. The wholeness is a matter of the realm of ends, in reference to and in contrast with

which the factors of experience are immanently related. It can not be a fusion unity, an absolute fulfilment, a super-experiential fact, or a good throughout. It must be a good with which all evil and good experiences are vitally related, but related in the sense that at any moment of time evil is essential in the achieving struggle for the good. In it the evil and the good are not a series of absolutely necessary events. Achievement is a fact and without it there is no good of the whole. Again, it is not a good from which all evil is excluded, nor is it a self-sufficient whole independent of finite experience. It is a perfection only in the sense that there is a necessary order of experience which makes all good possible, such as the inseparable connection of good and evil, the necessity of a teleological order, the necessity of a unity between ideal ends and contrast elements which hold the ends in adoration, and the necessity of an ideal immanence of the highest with the lowest values. There is thus at any and all times a necessary order or form than which, considering all facts, nothing can be preferred, because without such good the highest values would have no meaning. The good of the whole is not a perfection in which to change one could only change for the worse, but a perfection in the sense that, considering all that is and has been, it is at any moment the most perfect. It is an order which expresses an ideal of perfection, a conceivable arrangement of factors of experience which is the most perfect organization of details, and hence the ideally perfect, but which, on the other hand, can never be tested out except by trial and error experience.

In short, perfection of the whole therefore includes, (1) a necessary and therefore a perfect order without which goodness could not exist; (2) a level of achievement which may alter but at any moment of time is the best, considering the actually cooperating factors; (3) an idealization of what ought to be, considering the rise of new factors and impulses and considering the most detailed distribution of beneficial goods to the persons of any given period. It inevitably includes the ill of the parts. This seems psychologically necessary, whether or no one subscribes to the logical contention of the absolute idealists like Royce and Bradley or Bosanquet, that "ill in the temporal order is the condition of the perfection of the external order" and "the absolute is the richer for every discord and for all the diversity which it embraces." In some sense all must be included, yet it must allow for degrees of appreciation of the good, complete absence of appreciation and also annihilation of the apparent individual good. Indeed, the good of the whole must always seem quite external and foreign to some, though the aim of a democracy and of Christianity is to develop to the maximum the appreciation on the part of each of such a good. In any case, antag-

onism to the good of the whole, sacrifice for the good of the whole, and annihilation of the individual good are a foundation order of experience. Indeed, it seems to be this fact of experience that many have translated into the life of the absolute.

The Ethics of Possession: E. JORDAN.

The characterization of the present as a practical age seems to imply that all interpretations of value must be put in terms of material things. This is the case whether the question is approached from the standpoint of common life activities as instanced in business, or of formulated "common sense" as expressed in law, or of theory as expressed in political thought. But either individual or group action based on the property idea of value produces results just the opposite of those we claim to intend.

The question would then seem to be whether property or possession can be made the basis of human order. Analysis of accepted facts indicates that possession may be basic to a social order, but the order arrived at is the new order of cooperative or community good, since the attempt to produce any other good is disruptive of all order.

It then follows that possession as the basis of an order is a "natural right" of the order, in that it implies a shared use and enjoyment or control and disposal of goods on the part of all persons. It appears further that the right to possess is not "natural" to the individual, either as expressing through law (as law at present stands) his intelligence or feeling, or as representing tradition or God.

Hence the ethical end is a cooperative *common* wealth, or an intelligently planned and esthetically purposed state or status. This end determines the objectivity and authority of moral judgments. But the end develops through growth in complexity and quality of personal relations, so that standards must be flexible, different from present standards in law, politics, *etc.*, which were designed for conditions radically different from those of the present.

It is doubtful whether existing ethical systems supply such standards, so criticism of the theory which is supposed to support existing institutions is the need of the present. It is suggested that criticism will break with the individualism that is dominant in institutions as now organized, and will follow social lines of direction.

The Problem of Philosophic Methodology in the Light of the War:
A. E. AVEY.

For philosophy the method of procedure in the interpretation of things is constituted not by rules of operation of mechanical apparatus, but by the assumption of an attitude of mind. The success of

results depends largely upon the character of this original attitude. Hence the necessity of avoiding a bias which necessarily cuts off part of a possible and desirable result. It is on this problem as working out a factor appearing first as a mental attitude, developing into a system of values, and finally into action with social, national, and international significance that the interest of this paper centers. Whatever throws light upon the problem is relevant to the discussion; and the war has thrown some light.

The war has frequently been regarded as a clash of philosophies, and may therefore be regarded as a clash of mental attitudes or philosophic methodologies. The fundamental positive feature of the Teutonic philosophy is utilitarian and materialistic. It manifested itself before the war in the economic and financial policies within Germany and led to conditions which made necessary the exploitation of other nations for the advantage of German investors. The whole policy of Germany seems a living embodiment of Schopenhauer's description of the movement of the will in its commonsense and practical scientific phases. It is an exploitation of all things in the interest of an end which lies ever beyond. It discovers nothing worth while in and for itself. Small nations have no intrinsic value. Large nations have only negative value because they are not subject to Teutonic exploitation.

In contrast to this, the noteworthy feature of the attitude of American and Allied leaders of thought is the championing of the rights of small nations as possessing value for their own sakes. In this we see the appreciation of the other half of Schopenhauer's philosophy, a factor of attitude characteristic of the artist in his appreciation of the value of the insignificant, *e. g.*, in still life, and in phases of fact possessed of no practical or mercantile value.

This factor of esthetic appreciation which seems so noticeably absent on the one side and present on the other offers promise of saving western civilization from the predicament into which the Teutonic philosophy has led it. It is the one factor of attitude which gives promise of salvation for the purely cultural values in experience.

It should therefore be explicitly incorporated into philosophic method. It is an indispensable factor of attitude without which a satisfactory system of philosophical values can not be attained. The nature of esthetic experience should be more seriously and carefully studied. It should not be set aside as something purely subjective; the social consequences of its presence or absence are too marked to allow its being dealt with thus lightly.

Ethics and Social Reconstruction: E. L. SCHAUB.

The possibilities of ethics in the way of formulating definite programmes of social reconstruction are decidedly limited. Even in the life of the individual the principles developed by ethics afford but little guidance, and that not merely because of their abstractness but because moral perplexities frequently find their solution only in a process by which the individual comes to know himself, to interpret his "various selves" each to the others. Programmes of social reconstruction also involve the application of general principles to objective conditions. But, further, they must achieve a reconciliation of principles or view-points and, what is even more difficult, a genuine agreement of persons and groups. For the conflicts which underlie the necessity and the demand for social reconstruction are almost invariably a clash of what are conceived as rights as well as interests. How may these conflicts be resolved? Perhaps through strife, inasmuch as this may eventuate not merely in the triumph of the one party but also in the general adoption of its view-point, ideals, and programme. But unless and until there is such free and full, as well as general, acceptance, the process of social reconstruction, even in the respect in question, has not reached completion. What further method is available? Only that of a mutual interpretation through which each party acquires a measure of insight into all the divergent attitudes and interests, together with some appreciation of their elements of justification and value, and that of a mutual give and take until, through progressive modifications of each in the presence of all, a basis of common life and good-will is not *thought* out but, very literally, *worked* out.

Ethicists of opposed camps not infrequently agree as to social programme, ethical "brethren" have been known to be at odds in matters of practical social import; many, if not all "ethicists" accept such general principles of action as the Golden Rule; medical, legal, and even professorial associations develop their standards and codes through committees of their own and not through the employment of a professional "ethicist." Does not all of this suggest that much may be said in substantiation of a realistic standpoint such as that of Hegel?

Yet, even though it be measurably true that "we live forward; we think backward," as three such divergent philosophers as Hegel, Kierkegaard, and James alike maintained, ethical reflection operates (1) through its influence upon the intellect and character of the individual, and (2) through disentangling from their concrete expressions the principles actually worked out in the various spheres of social relations and, with their aid, disclosing the basal nature of the conflicts that arise elsewhere, with some suggestion as to the possible

general direction of their solution, thus assisting in bringing every organization of human activity to the level of that specific one whose particular historical development has been such as to make it, in the respect in question, of greater desirability.

Intellectual Reconstruction after the War: C. E. AYRES.

1. The precarious situation in which modern society finds itself has been shown to be due in large part to the discrepancy between our machine technology and our institutional arrangements. Since the latter rest upon social habituation they have naturally failed to keep pace with the very rapid development of the technological process.

2. There can be, in the nature of the case, only two methods of remedying the situation: (a) by the reconstruction of the institutional order to make it fit the technological situation; (b) by slowing down the development of the machine technique to make possible this adaptation of our social arrangements to the newer state of the industrial arts.

3. Not only is (a) the method universally recommended, but any proposal along the line of (b) is repelled in all quarters. Professional students naturally unite in condemnation of any plan for retrenchment in those sciences upon which the continued rapid development of the machine technique depends. Philosophy has unintentionally complicated this situation through its theory of absolute truth with the correlative notion of the inviolability of every specific attempt at communion with the absolute truth.

4. This situation can be relieved only by a clear realization that since truth is contingent upon meaning, and since meaning is determined by context, the truth of every research is conditioned by the circumstances under which it is carried on.

5. Only such a conception of truth as will bring a full understanding of the meaning of that scientific truth the discovery of which serves only to accelerate technological progress, can render any proposal to limit such researches, in the interest of the general welfare, available to society.

The Democratization of Jehovah: E. D. STARBUCK.

(Abstract not furnished.)

Art and the Democracy: H. B. ALEXANDER.

(Presidential address, to be published in full.)

The Persistent Problems of Philosophy: B. H. BODE.

(Published in full, this JOURNAL, Vol. XV., pp. 167-177.)

Bode's Conception of Consciousness: H. W. WRIGHT.

According to Bode, consciousness reveals the outcome of the relatively unorganized responses of any moment before they become overt. By selecting and exalting that particular response which promises to forward the business of the moment, consciousness re-directs behavior in the interests of future consequences. It is a future adaptation that has been set to work to bring about its own realization. Hence the meaning of all conscious objects without exception reflects the anticipated outcome of nascent motor responses. Relative to this theory, my purpose is to show: The motor responses of the living individual do establish the existence of perceived objects as stimuli affecting his organism. The meaning of such objects is also constituted in part by anticipations (in ideal imagery) of the completion of incipient motor responses, which serve to locate the object with reference to the percipient, giving it position in his world of determinate spatial relations. But the meaning of conscious objects also includes qualities whose characteristic differences can not be resolved into variations of anticipated motor response. They can not because (on Bode's own theory) consciousness is essentially selective and selection is made not among anticipated variations of motor activity, but among anticipated satisfactions whose values depend upon their qualitative diversity. If it is said that these qualitative differences reduce upon reflection to diverging lines of motor activity still further projected into the future, the reply is that such programmes of behavior can become alternatives for conscious choice only in so far as they are concerned as leading eventually to qualitatively different satisfactions. It is impossible therefore to maintain the selective character of consciousness without admitting also a variety of qualitatively different interests or satisfactions through choice, among which the individual expresses himself as conscious subject.

On the Nature of our Knowledge of the Physical World: R. W. SELLARS.

Our task is to make reasonably clear just what knowledge of the physical world should mean to one who maintains that it can not be apprehended and who is yet not an agnostic. The attempt will be more at explication than at demonstration, the concern being with the implications of principles and conclusions which we have elsewhere defended.

Philosophy made a serious mistake in putting the query, *What can we know, conscious states or physical things?*—before the query, *What is the nature and content of knowledge?* We must

needs come to some clear idea of what knowledge consists in before we can decide what objects are open to it.

Knowledge supervenes upon the reality known. To know an object is not to form it, but to think it as it is apart from the mind. There appears to be a growing unanimity among realists upon this point.

But the presentations which for common sense constitute the physical reality and which are apprehended turn out to be *subjective*, that is, functions of the organisms as stimulated by its physical environment. The mind affirms these presentations to be the physical reality, and gives them an interpretation and setting corresponding to this affirmation. But critical reflection refuses to assent to this naïve realism.

The presentations must be considered the *material* of critical knowledge, the means to knowledge of an unapprehensional sort. Thus enlightened knowledge is a product of mental activity working upon the material given to the mind in observation. Such material suggests and falls into typical categories, in terms of which we are ultimately compelled to think of the physical world.

The Division of Judgments: R. C. LODGE.

In dividing judgments, modern logicians tend to accept one of three standpoints: (1) Judgment is one and indivisible, without specific differentiation; (2) judgments differ as the objective relations apprehended differ; (3) the judging process varies from the superficial to the profound, or from the crude to the efficient, and in this process we can recognize certain typical *stages*. Modern logic thus recognizes no *logical* division of judgments; for (2) is ultimately a distinction of *objects*, and (3) is subjective and psychological. Most modern logicians try to unite (2) with (3).

Let us avoid the reproach of dualism, and adopt (3). It is the relative proportion of sensory and intellectual elements which determines the various stages of the process. We accordingly recognize:

Stage 1. Judgments of Perception (It is warm; this tree is taller than that).

Stage 2. Judgments of Experience (A thick rug prevents chilblains; children are a joy).

Stage 3. Symbolic Judgments ($x^2 - y^2 = (x + y)(x - y)$; Socrates was put to death for political reasons).

Stage 4. Transcendent Judgments (I am the master of my fate; things in themselves are unknowable).

All four types represent stages in a single process varying from

the more sensory to the more intellectual, and including all types of thought.

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REVIEWS AND ABSTRACTS OF LITERATURE.

Philosophical Essays in Honor of James Edwin Creighton. By FORMER STUDENTS. New York: The Macmillan Company. 1917. Pp. xii + 356.

The best evidence of a teacher's influence is not the acclaim of his students but the character and spirit of their work. The dominant note of the present volume is, on the whole, breadth of view; which is but the motive of justice and conscientiousness. If this is, as we believe, the quality most needed in philosophy, and particularly in American philosophy to-day, Professor Creighton's teaching has been and is of the highest possible service to serious thinking. In one way, it must be admitted, the essays fail to realize fully the spirit which animates them: they are so many that each must needs be too short for thorough discussion of fundamental points. Nevertheless the papers are careful and painstaking, as a rule; particularly those concerned with historical and idealistic topics. To select certain ones of the twenty-two for detailed comment and neglect the rest, would but evince the reviewer's personal preference; and certainly all the papers deserve to be carefully perused by those interested in their subjects. The first seven are concerned with historical topics—Spinoza, Hume, Hegel, *etc.*—and are devoted to the correction of one-sided interpretations hitherto prevalent. We learn that Spinoza was not the rigid and narrow mathematicist of tradition, but was great enough to anticipate, however confusedly, something of the platform of modern idealism. "The great fault of a mediocre thinker usually is that, having been born with a capacity for only the narrowest vision, he hits upon some one category or set of categories. . . . Spinoza's fault was plainly the opposite" (p. 2). "Spinoza . . . comes nearer to Hegel's own organic view than Hegel ever admits" (p. 38). Nor was Hume a mere empiricist: "Hume's skepticism is not the inevitable result of empiricism; it is the consequence of developing an empirical method and judging the outcome by a rationalistic standard" (p. 44). Kant's freedom was quite one-sided; in his system "freedom becomes a defiantly resigned consciousness of determinism" (p. 68), Vedantism, too, with its many sorts of idealism, is a richer philosophy than western thinkers are accustomed to suppose.

The historical papers are followed by three which criticize absolute idealism from within; insisting upon its general correctness, but demanding additions which should abolish the gulf between the Absolute and its appearances. ". . . thought must be explicitly defined as a process of experimentation, trial and error, essentially temporal in its nature" (p. 137); "the sound standpoint in both logic and metaphysics for me is not an organic eternalism, but *organizational Temporalism*" (p. 160). In a critical paper on *The Limits of the Physical*, the inadequacy of "mechanical" philosophy is thus declared: "It is outgrown, doctrinaire folly to suppose that the future development of such a science as economics, for example, will result in the exhibition of its phenomena and their laws as special cases of physical phenomena and physical laws" (p. 178). And ". . . the error [of mechanism] lies in failing to recognize that what is true of all the members taken distributively is not necessarily true of the class as such" (p. 181). "For physical science there are neither German armies nor Democratic victories, neither cabbages nor kings" (p. 182). In most of the remaining papers the ruling motive seems to be dislike of narrowness; as in Mr. Wright's appeal to volition, the organic fusion of the subjective-objective dualism, in Miss Talbot's resuscitation of that under-dog, the good old copy-theory, in Miss Jordan's impassioned protest against the one-sided tendencies of functionalism in education, morals, etc. (which protest we heartily welcome), in Mr. Townsend's laying bare of certain materialistic tendencies of pragmatism, and in Mr. Schaub's arraignment of that philosophy's treatment of religion for neglecting the motives of existence and static perfection, without which religion quite loses meaning. All these essays mentioned, as well as some unmentioned, deserve detailed analysis and quotation; but to treat them all fairly would involve more space than a review should occupy. The present reviewer can not, however, forego mentioning the lucid and interesting description by Mr. Baird of certain factors recently unearthed in the thought-processes of man.

As was said above, it is the spirit rather than the results of these papers that is the significant thing; a spirit which needs to be more deeply incorporated into American philosophy than it has yet been.

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Proceedings of the Aristotelian Society, 1916-1917. New Series, Vol. XVII. London: Williams and Norgate. 1917. Pp. 497.

The Aristotelian Society volumes are of course familiar to all who follow contemporary philosophical movements, and their value need not be insisted upon here. The present volume is, considering

the war conditions, remarkable both for size and for variety. But it must be admitted that, for one reader at least, the quality of the articles in this volume falls short of what the intrinsic interest and importance of many of their subjects had led him to expect. Even some of the best rise little above high-grade mediocrity. Yet there are a few that are worthy of attention. Most readable, perhaps, are "Hume's Theory of Miracles" by C. D. Broad, "Fact and Truth" by C. Lloyd Morgan, and possibly also the symposium on "Social Reconstruction," to which Principal Jacks and G. Bernard Shaw contribute. The article by W. A. Pickard-Cambridge on "Our Knowledge of Value" is also worthy of attention. The present reviewer was delighted by most of Professor G. Dawes Hicks's article entitled, "The Basis of Critical Realism." It would stand out as the most important contribution in the entire volume if only its constructive proposals were as able as are its criticisms of Holt, Russell, and other "new realists." But alas! it is so easy to suggest where the other fellow is wrong, so hard to tell what is right!

Philosophical cooperation is the present hope of many reformers of philosophic method. The Aristotelian Society has done much to attain it. What shall we say of the result? It furnishes undeniably a healthy interchange of ideas, and keeps a living interest in philosophy awake. All that is good. Is more than that possible? The attempt at a closer systematic cooperation which most strikes one in the present volume is the symposium on "Materials of Sense." It is begun by Dr. G. E. Moore with one of his usual efforts to split cobweb-threads lengthwise, which is his idea of precision. It proceeds thereafter, in spite of the obvious talent of the disputants, in ever increasing futility. It is an example to make you despair of cooperative philosophy. You sigh for a paragraph or two by a philosopher of genius; somebody to say things new and wonderful, even though he be a little careless in the way they are said. When philosophy is a failure, surely it is the most deadening of failures; you long for the voice of a lion, that shall make the chatterers be still. But there is probably no recipe for producing philosophical geniuses, and so we must be patient with cooperative mediocrity, which tries to write Hamlet by each man contributing the best verse he has wit enough to think up.

The cooperative philosopher has the further burden upon him of listening to, and trying not to seem bored by, the other fellow's contribution, in order to get the other fellow to listen to his. And all must be published uncensored in the volume of *Proceedings*! And so we have what is illustrated by some of the papers in the present volume, beginners or more experienced ones grown careless, who each in turn flaps his wings with a great clatter, and soars

right up towards the empyrean, and then suddenly gets out of breath and flutters, or tumbles, to earth again. You wish they would do their flying in private until they have learned to stay on the wing long enough really to arrive somewhere. But all this notwithstanding, the Aristotelian Society is an answer to those who think philosophy is losing its hold on the minds of men; and the country that can produce philosophizing so good may hope from time to time, in the future as in the past, to produce philosophizing that is still better.

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JOURNALS AND NEW BOOKS.

THE AMERICAN JOURNAL OF PSYCHOLOGY. April, 1918. *The Effect of Auditory Distraction upon the Sensory Reaction* (pp. 129-143): EDNA E. CASSEL and K. M. DELLANBACH. - Distractions may inhibit, lengthen, facilitate or shorten the reaction. Continuous distractions are easily habituated, while intermittent distractions have a more profound effect on the sensory reaction time. *A Medium in the Bud* (pp. 144-158): G. STANLEY HALL. - The story of a girl who believed she could commune with the spirit world is told. Her plan turned out to be an attempt to win back a lover. This article is an interesting study in adolescent imagination. *A Psycho-Analytic Study of Auguste Comte* (pp. 159-181): PHYLLIS BLANCHARD. - Comte possessed a strong egoism. This arrogant self-confidence was later softened by his love for Clotilde de Vaux. His writings clearly reflect these influences. Bibliography. *On "Retiring" and "Advancing" Colors* (pp. 182-186): M. LUCKIESH. - Blue as a rule seems to retire while red advances. *A Note on Association Time and Feeling* (pp. 187-195): E. C. TOLMAN and ISABELLE JOHNSON. - Simple unpleasant sense qualities lengthen association-times. This effect is more marked in women than in men. *Prolonged Infancy-Its Cause and Its Significance* (pp. 196-203): MAX SCHOEN. - Learning and dependence are different qualities and are not necessarily related. *An Objective Measure of Attributive Clearness* (pp. 204-207): EDNA E. CASSEL and K. M. DALLENBACH. - A single observer finds that attributive clearness may be measured by the average duration and variation of the sensory reaction. *What is Introspection?* (pp. 208-213): STEPHEN C. PEPPER. - Introspection is anything that comes along, while in the objective methods the data is picked. *A Bibliography of Rhythm* (pp. 214-218): CHRISTIAN A. RUCKMICH. - Second supplementary list. *Minor Studies from the Psychological Laboratory of Cornell University. On the Calculation of an Associative Limen* (pp. 219-226): H. D. WILLIAMS. - The

mnemometric function is the phi-function of gamma, and the effective condition of association varies with the logarithm of the number of repetitions. *An Analysis of the Psychometric Function Two-Point Limen with Respect to the Paradoxical Error* (pp. 227-232): MARGARET KINCAID.—An analysis indicates the operation of two antagonistic factors. *Book Notes*: John Edgar Coover, *Experiments in Psychical Research at Leland Stanford University*. Walter Goodnow Everett, *Moral Values; a Study of the Principles of Conduct*. Burtis Burr Breese, *Psychology*. George Trumbull Ladd, *The Secret of Personality*. James Drever, *Instinct in Man*. John Harrison Minnock, *An Investigator of Certain Abilities Fundamental to the Study of Geometry*. C. Judson Herrick and Elizabeth C. Crosby, *A Laboratory Outline of Neurology*. Elizabeth Severn, *The Psychology of Behavior*. June E. Downey and Edwin B. Payson *Unidexterity and Mirror Writing*. F. E. Owen, *The Psychological Clinic of the Southern California Association of Applied Psychology*.

Carnegie Endowment for International Peace: Year Book. Washington, D. C. 1918. Pp. xiv + 272.

Drever, James. *Instinct in Man: A Contribution to the Psychology of Education*. Cambridge: University Press.

Fabre, Jean-Henri. *The Wonders of Instinct*. Translated by Teixeira de Mattos and Bernard Miall. New York: Century Company. \$3.00.

Morel, F. *Essai sur l'Introversion mystique*. Geneve: Librairie Kundig.

NOTES AND NEWS

SANTAYANA'S work, *Egotism in German Philosophy* has appeared in French translation, with a preface by Émile Boutroux, under the title *L'erreur de la Philosophie allemande*. It is reviewed in the July-August number of the *Revue Philosophique*.

It is announced that Professor Lévy-Bruhl, of Paris, is to be exchange professor at Harvard for the coming year, but that he will not begin his lectures until the beginning of the second term.

WE have received from Professor Hartley B. Alexander a sketch in remembrance of Henry Kirke Wolfe, born November 10, 1858, and died July 30, 1918. Professor Alexander writes of Dr. Wolfe with the deep piety of intimate obligations.

THE Yale University Press will publish *Authority in the Modern State* by Harold J. Laski, a sequel to *Studies in the Problem of Sovereignty*.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE EMPIRICAL CORRELATION OF MENTAL AND BODILY PHENOMENA

SINCE the days when Descartes placed the soul in the pineal gland to deflect at will the course of the animal spirits and his successors formulated in return the elusive dogma of parallelism, mankind's conceptions of the soul and its relation to the body have remained fundamentally unchanged. The modern substitute for the Cartesian view is framed, it is true, in the light of a riper knowledge of the physiological structure of brain and nerve; but the difference between a soul which controls the mechanical action of the brain through a pineal gland and one which operates more obscurely at the synapses, raising and lowering the resistance to nervous discharge to effect its purposes, is not a fundamental one. Nor, on the other hand, has the advance in science essentially altered the conception of parallelism. Upon the familiar and dreary round of argument and counter-argument through which the long controversy between interactionism and parallelism has worn itself out, we shall not enter. The issue is not decided but it is no longer a living one. A growing sense of its futility has come upon us. It has survived so long because the only alternative to the conception of mind as a being or activity distinct from the body which has seemed possible has been the identification of the mental with the physical. In the last few years, however, changed perspectives have brought into fresh relief the unsurmounted, and, I venture to say, unsurmountable difficulties which oppose the belief in a transcendent soul, or a conscious existence *sui generis*. The conviction has gained ground among us that such a belief is a survival of older modes of thought, in other fields happily outgrown. But to cherish this conviction is to face the task of finding new terms in which to read the empirical facts which the older conception imperfectly embodied. The newer movements of our own day, pragmatism, neo-realism, behaviorism, have all been, in part at least, motivated by the need for such philosophic and scientific reformulation. And amid all the confusion of present-day controversy there is to be discerned, we believe, a meas-

ure of common achievement, not yet consummated, nor capable of precise definition, but the foundation for an intellectual advance as momentous possibly as that marked by the philosophy of Descartes.

It is the purpose of this paper to examine how psychological phenomena such as emotion and perception are empirically correlated with the functioning of the nervous system. The alternatives with which we are familiar are either that for every change in conscious experience there is to be found a corresponding change in the chemical and physical processes taking place in the cerebrum; or else, that while many of the simpler conscious processes may be initiated by cerebral changes and in turn modify such changes, no general or complete correlation is to be made out between conscious experience and nervous action. These alternatives are not, as I shall try to show, exhaustive, nor is either of them an adequate description of the empirical facts. What they both falsely presuppose is that, if there is any systematic correlation between conscious experience and the functioning of the nervous system, it must be between psychical processes and the physical or chemical changes taking place in the brain. Or, in other words, it is taken for granted that the nervous system is adequately describable as a physiological organ and its functioning as a complex set of physical processes.

We find this point of view most clearly expressed in such nineteenth-century thinkers as Huxley or Tyndall. Both scientific investigators of the first rank, they were deeply impressed by the fact that research into the processes of organic matter reveals nothing but natural forces. Even the nervous impulse is nothing but chemical reaction. We do not, says Tyndall, possess the organ, nor the vestige of an organ, which enables us to pass from the mechanics of the brain to the corresponding feeling. Thus he was led to a parallelism which could point to a possible connection between a left-hand spiral motion and the emotion of love. This undoubtedly was a bit jocose, but it fairly represents the categories to which the speculation of his generation was limited. Bound to such limitations what, indeed, is left but an *Ignorabimus* before a final mystery?

It is in keeping with this mode of thought to speculate further as to the consequences of producing in a test tube the highly complex and unstable molecules of a brain cell and stimulating them to reactions identical to those occurring in the brain of a living being. Might there not at the same time be produced a throb of simple consciousness? If such speculations as these have not been often openly indulged in, it has been common sense and not theoretical insight which has prevented. Even so modern a writer as Münsterberg is able to postulate an ultimate conscious element, simpler than the sen-

sation, and corresponding to the reaction of a single cerebral cell as its compound, the sensation, corresponds to the reactions of a localized group of cells.

This view of Münsterberg's, however, may properly be said to represent an alternative interpretation of the correspondence theory. We may distinguish it from the *psycho-physical* parallelism of Tyndall, by the title *psycho-physiological* parallelism. According to this more cautious interpretation, the correlative of a specific mental process is not a geometrical figure of the dance of brain atoms, nor even necessarily a particular chemical reaction, but the occurrence of similar physiological processes in definite physiological structures. The classic doctrine of specific energy is an example in point, and indeed a large part of what goes under the head of physiological psychology belongs to this view of the mind-body relation. This form of parallelism offers certain advantages over the cruder psycho-physical formulation. It is less doctrinaire. It does not commit one to the extremes of kinetic mechanism; and it has far more regard for empirical facts. Theoretically, however, such a doctrine as that of specific energy leaves us face to face with as final a mystery as that which confronted Tyndall. And as I shall try to show it is not verified, nor verifiable, by available empirical evidence.

In a sense the contention of parallelism is acceptable. For every change in psychical processes there doubtless is a change in the processes going on in the cortex. But it is equally true that for every change in psychical processes there is a change in atmospheric currents. To make the concomitancy of psychical and cortical change a significant *correspondence*, which is what parallelism claims, it is necessary to establish that the characteristic groupings, or *phenomena*, which the one presents are traceable in the other also, and that a repetition of a feature of the one matches a repetition of the corresponding feature of the other. What makes parallelism in whatever form so paradoxical a doctrine is the fact that it assumes the phenomena of nervous action to be individuated and determined by an entirely different set of principles from those by which the supposedly corresponding phenomena of conscious experience are individuated and determined. That there is a correspondence of some sort between the phenomena of conscious life and the functioning of the nervous system we should all admit. The question is: Of what nature is it? In what terms are the phenomena of nervous function which correspond to the phenomena of conscious life to be described? What the mind-body problem demands for its solution is the exhibition of a principle of individuation and classification common to the two. To accomplish this would in truth be not to solve the

problem but to show that its very formulation depends on untenable assumptions. For to show that two supposedly disparate systems of phenomena are individuated and classified by a common set of principles is to exhibit them not as two but as one single system of phenomena.

The clue of which we are in search lies, I believe, close at hand. It is to be found in the simple insight that the central nervous system is not primarily a physiological organ. Its function is only secondarily to maintain the inner equilibrium of bodily processes which constitutes the living as opposed to the dead being. Its primary function is the adjustment of the behavior of the individual as a whole to the outer world of goods and dangers which constitutes his environment. It is in the performance of this wider function that we must find the correlate of feeling and thought, rather than in the stimulation of neurone and ganglion. It is true that each act in the performance of this function is controlled by the stimulation of neurone and ganglion. But the uniformities of function, the characteristic *phenomena* which correspond to psychological uniformities are not describable in physiological terms.

This has been strikingly, although perhaps unintentionally illustrated for us by Professor John Watson in a recently published article, "On Behavior and the Concept of Mental Disease." A distinction is commonly made by alienists, so Professor Watson tells us, between such mental disorders as are conditioned by cortical lesions, or physiological disturbance of cortical function, and those for which no physiological cause can be assigned. These last are commonly called mental or "strictly mental" disease. Such a case might be, for example, an individual who ordinarily comported himself in conventional fashion, but whom religious service, instead of inspiring to appropriate devotional attitude and behavior, irresistibly impelled to the loud utterance of outrageous and ribald remarks. What Professor Watson urges is that such cases as these are not purely mental in the sense that there is no correlative malfunctioning of the central nervous system. Many such cases he describes as wrong "habit complexes." Now inappropriateness of habitual behavior is evidently not to be identified with physiological disturbance, although it is as evidently due to the failure of the cortex to function properly. If Professor Watson is right, it is evident—though he himself apparently does not draw the conclusion—that normal and abnormal functioning of the cerebral cortex may be distinguished, not on the basis of any determinable physiological differences, but by the relative appropriateness of the cerebrally controlled behavior to environmental—say even social—conditions.

The characteristic uniformities which the functioning of the cortex exhibits to our observation, and according to which it may be intelligently analyzed, are not, then, uniformities of organic process or muscular contraction. They are uniformities of *behavior* in a larger sense.

In the light of this conception let us turn to the examination of some of the simpler typical mental phenomena and their bodily correlates. We shall consider first the case of emotion, using *fear* as an example.

Research has so far failed to localize this and other emotions in the cortex or in the lower centers. Yet fear, like other primary emotions, has markedly characteristic bodily expressions. It manifests itself, in fact, in a variety of ways: in flight, in hiding, in shrinking, sometimes in "freezing," or a complete paralysis of all activity, even vocal utterance. Sometimes it impels the individual to seek the protection of some other individual, as the child flees to its mother's skirts; or, again, it inspires to frantic attacks on the inciting objects. All these characteristic responses are found in man; and to these we may add the "expressive" reactions—such physiological disturbances as pallor, trembling, increased heart-beat, excitation of the ductless glands, *etc.* If we include the species we find even greater variety of congenital and acquired responses. Now what is the common denominator of these varied modes of behavior? There must be considerable diversity in nervous activity to issue in such diversity of response. For not only are the characteristic responses different on different occasions; the stimuli which inspire fear congenitally, and as a result of simple experience, differ at least as widely. These widely differing stimuli, and the widely differing responses to which they lead, must be connected by a great diversity of central stimulation. Although various theories have been advanced, we can point to no cortical or sub-cortical "center" of fear, nor to any characteristic set of paths followed by the excitations set up by stimuli responded to as "fearful." And while recent researches have shown that an important part is played in emotional disturbance by the activity of the ductless glands, they have failed to discover in such physiological activity any specific correlate to a specific emotion. Yet these varied modes of response and the differing cortical action leading to them mediate a common experience—fear. What the various stimuli have in common is no set of similar physical characteristics. It is the *common relation* in which they all stand to the individual, the relation of being *dangerous*. Similarly the varied responses fall into a single group because of their common function in averting the threatened danger. The response

actually elicited on any particular occasion may, it is true, fail to avert the danger, but the normal function of such behavior remains the same. The variety of fear responses exhibited by a species are undoubtedly evolutionary modifications of much simpler reactions, possibly even the primitive avoiding reaction. But the modifications of reaction which have been selected in the race, as in the individual, have been selected and preserved because of their success in performing this function, just as the stimuli which evoke it are selected because of their dangerousness. Consequently we find civilized man not only persisting in the congenital and simpler types of reaction to danger, but acting in indefinitely varied and indirect modes as well.

It is their common ancestry and the community of function in the economy of life which serves to unite the varied responses into a single phenomenon. So, too, it is the identity of the part played in this economy by the differing cortical and sub-cortical processes exciting these responses that determines the identity of the correlated conscious experience. Even if research should discover a "fear center" to which all "fearful" stimuli are transmitted and whence all fear responses are indirectly excited, the case would not be essentially altered, for we should point to the stimulation of this center as the correlate of the emotion fear precisely because of its function in coordinating such responses to such stimuli.

We are now prepared to consider the case of perception. This is more complicated than emotion since perception covers so wide a range of phenomena, and since meaning is so largely involved. Thus we may *perceive* a total situation, a single object, a relation, or a quality. But in none of these cases, except possibly the last, have we grounds for supposing that "sameness" of perception is conditioned by sameness of physiological process. My perceptions of my dog on different occasions, since they are perceptions of this same familiar dog, are in so far alike. But the sensory excitations from eye and ear and hand, if compared on any two occasions, would probably be found to contain no single common factor, nor is there evident reason to suppose that the perception of my dog excites any invariable motor response. Perceptual experiences are commonly classed as like or different because of identity of meaning, rather than because of likeness of sensory content, and, as is well known, physiological psychology ventures to say very little concerning the physiological basis of meaning.

When we come to perception of simple sense-qualities, such as color, tone, odor, *etc.*, however, the case is very different. Such experiences seem to be classed, both by common sense and psychology,

wholly on the basis of immediately felt identities and differences, without any reference to meaning. And it is these psychological phenomena to which definitely localized cortical excitations correspond. Thus there is a well-defined visual center in the occipital lobe, *etc.* In short, perception of sense qualities is the field where the evidence for psycho-physiological, if not psycho-physical correlation is most convincing. In the phenomena of vision, in particular, research has established beyond dispute that specific physiological structures condition the experiencing of the different visual qualities. Various color theories, it is true, continue to dispute the field, but all unite in the unquestioned assumption that the experience of color qualities is mediated by the functioning of correspondingly different physiological structures. Take the case of "red," for example. Here, as in the case of other visual and auditory qualities as well, we find a definite physical correlate of the sense quality "red," *viz.*, specific wave-length. In order that a physical stimulus of this sort should excite the corresponding sensory quality, it must initiate a specific process in retinal end-organ, which must in turn set up processes in the cortical cells of the visual center. Now, according to the traditional view, the excitement of such specific processes in the visual center is the essential and sufficient condition for the experiencing of the quality "red." What we have to ask is whether this view adequately represents the relevant empirical facts, or whether it is a result of the same theoretical preconceptions which dominated the thought of Tyndall's generation. That the excitation of specific processes in the visual center is a necessary condition of experiencing "red," is, of course, to be admitted; but that such excitation constitutes the *essential* and *sufficient* condition is not, I submit, a conclusion warranted by empirical evidence, nor is it a conclusion which any available empirical evidence could suffice to establish. For what sort of empirical evidence is adducible? The evidence from behavior only. That an individual is or is not capable of experiencing a given sense quality can be determined only by his capacity to discriminate the quality by appropriate behavior. It is only on the basis of evidence from behavior that any conclusions as to the cerebral function can be drawn. Now the ability to discriminate a sense quality like red depends not simply upon the excitation of specific processes in the sensory center, but upon the existence of an extensive system of sensory and motor connections. For such a system of connections is implied in the very act of attention itself by which the quality is perceived. Consequently, what the empirical evidence points to as the neural correlate of the sensation "red," is not the occurrence of specific processes in the visual center, but the

functioning of that center as a member of a complicated system. To suppose that excitation of the visual cells could mediate the experience of sense quality red if their functional connections with other centers were interrupted, is to make an assumption for which no possible evidence is available and which must rank accordingly as futile speculation.

Let us turn to the consideration of the psychological correlates. It is often urged that the analysis and description of mental phenomena must be carried out in the last resort on the basis of introspection. "Fear" is something I first became acquainted with in my own experience, and afterwards learn to associate with its external manifestations. Red is a felt quality, knowable only in its immediacy. So all our feelings and sensations, if not our thoughts and beliefs, are something immediately and directly experienced, something whose intrinsic qualities are the private possession of each of us. I may, indeed, on the strength of the dubious argument from analogy, attribute to my fellow-beings the enjoyment of inner experiences like to mine. But all that is open to my observation is his like behavior. It *may* be true, since the argument from analogy falls so far short of proof, that your feeling of fear is more like my sadness, or my anger, than it is like the fear I feel, or it may be something altogether akin to my experience. This hidden feeling of yours, unknowable by me, is like mine, indeed, in that it leads you to actions such as mine excites in me, but this likeness is merely one of external relationships. Or, again, although we both agree in calling blood red, and finding it in this respect like strawberries or the alternate stripes on the American flag, and although we both place it similarly on the color pyramid, and agree in calling it warm and the color of passion, *etc.*, it may be that what you enjoy as "red" I enjoy as "blue," and that only in their relations are our two reds identical. Indeed, we may go further and suppose that the whole course of your experience as immediately enjoyed by you is utterly different in felt quality from mine. Such a supposition can not be refuted—nor can it be established—for the simple reason that it is beyond the reach of any argument whatsoever. It is an essentially unintelligible supposition concerning wholly unknowable things-in-themselves.

Mental phenomena, like any other phenomena, can be subjects of intelligent discourse only in so far as they are identified and described in significant terms. In what terms then can mental phenomena be significantly and intelligibly described and analyzed? If the examples which we have chosen from the fields of emotion and perception are typical, it is only by reference, direct or indirect, to

their function in securing the adjustment of the individual to his environment, physical and social. The fear which the psychologist studies is not a hidden feeling cherished within his breast; it is precisely *that* feeling which is inspired by determinate objective conditions, and which impels him to characteristic expressions and acts. He can identify a given experience to himself as "fear" only in so far as it sends cold shivers down his back, or gives him a sinking in the pit of his stomach or makes his knees shake beneath him. But even these private earmarks are phrases whose significance is set by common usage.

If the foregoing contentions are just, the conclusion we have to draw is that the mental and bodily phenomena whose empirical correlation sets us our problem are not phenomena belonging to two distinct orders of nature, but phenomena which actually are, and only can be, individuated and classified by common principles. Both the bodily correlates of mental processes, and the mental processes themselves, are individuated as phenomena only on the basis of their function in adjusting the individual to his environment.

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THE DIVISION OF JUDGMENTS

I

JUDGMENTS in logic are traditionally divided on the four bases of quantity, quality, relation, and modality, and this division has received so much support from the influence of Kant that it has persisted in our elementary manuals down to the present day. And yet, the whole movement of what is known as "modern logic" has been definitely in another direction. Lotze, for instance, rejects at least three fourths of the traditional scheme. He insists that judgment is an interpretation of observed fact, expressing not merely a relation between the matters of two ideas, but also the ground of this relation, and shows that this relation and its ground are expressed by means of the copula. It follows that judgments can be divided into as many different forms as there are different meanings of the copula—*i. e.*, different accessory notions which we form of the connection of *S* and *P*. Of such accessory notions we form three main types: (1) the categorical, which connects *S* and *P* on the model of the relation of a thing to its property, (2) the hypothetical, which connects *S* and *P* on the assumption that a certain condition is fulfilled, and (3) the disjunctive, which imposes upon *S* the necessity

of choosing between several mutually exclusive *P*'s. The attempt to express the ground is inadequate in the categorical form, more adequate in the hypothetical form, and most adequate in the disjunctive form, which, by its reference to a system within which choice is logically determined, points to the ideal ground of complete coherence. Lotze thus recognizes three essentially different forms of judgment, which correspond to the group known traditionally as the relation-group.¹

For Sigwart, on the other hand, there are no essentially different forms of judgment. Any diversity supposed to attach to such forms is at best diversity of matter, the matters of the two ideas *S* and *P*. At its worst, such supposed diversity is diversity of verbal expression in the propositional forms of judgment. We must guard against thinking that the name "judgment" denotes a number of originally different and coordinate acts of thought. All judgments as such are, in fact, formed by one and the same mode of thought-activity, and thus we can recognize only one sort of judgment, the categorical statement that a predicate belongs to a subject.

For Bradley, also, the traditional forms of judgment are not essentially different. All judgments are assertoric or categorical, all are hypothetical, all are particular, all are universal, all are abstract and concrete, analytic and synthetic. There is only one form of judgment, the referring the ground of *SrP* to Reality—a reality with which we are in contact in sensory experience.²

Bosanquet, while insisting, like Bradley, that all judgments are categorical, hypothetical, universal, individual, positive, negative, abstract, and concrete, is yet especially interested in tracing the various forms of judgment which arise in the evolution of thought. Judgment, as the effort of thought to define reality, varies, as Lotze has pointed out, with the degree of success with which it defines. But it also varies, as Sigwart has insisted, with the kinds of reality to be defined. For instance, an equation, a definition, an esthetic appreciation, are all judgments. They differ with the difference of

¹ Quantity, quality, and modality, are rejected as failing to touch the essence of judgment, *viz.*, the relation and its ground expressed in the copula. The relation *SrP* remains unchanged whether we speak of one *S*, two *S*, or *nS*, whether we affirm or deny it, and whatever the degree of assertiveness with which we affirm or deny it. The influence of this view is strongly marked in the case, *e. g.*, of Hibben's *Logic*.

² We might further compare what Bradley says *re* the impossibility of having fixed models for reasoning; for the argument applies also to judgment. There are principles which test the general possibility of making a construction; but of the actual construction there can be no canons. We should need an infinitude of *schemata* to parallel the infinitude of possible relations between *S* and *P*. (*Princ. of Logic*, pp. 238-239, 246, 248.)

the totalities which they respectively analyze. They are divergent developments of the same relation, and the divergence is shown in the predominance in each of some special aspect which is present but subordinate in the other forms. In this way intelligence, in spite of its unity, is many-sided; and its aspects, which are correlatives, lose their true interdependence if we try to represent them in a single (linear) series, as is done, for instance, by Plato. Bosanquet accordingly gives us an elaborate division of judgments in a number of series: (1) rudimentary or intermediate series, (2) concrete or categorical series, (3) abstract or hypothetical series, *etc.* The species thus established are regarded as cross-sections through the self-evolution of thought, ways in which our concrete attempts to define reality by significant ideas have become crystallized, somewhat as the species-definitions in botany represent crystallized cross-sections of our ever-changing, evolving knowledge of plants. The scheme is not intended as a Procrustean bed for the facts of logic, but as a practical arrangement which shall assist the reader in understanding the judging process.³

According to Wundt, our logical thought is not immanent in the objects themselves; it is merely an instrument for investigating and discovering objective relations. From the view-point of logic, then, judgment consists in the analysis or articulation of a thought into its two main elements, *S* and *P*, and, as thus analyzed, judgment has three main kinds, according as we find differences, (1) in the *S*-concept, (2) in the *P*-concept, (3) in the relation of *S* and *P*. He therefore divides judgments as follows:

- I. Subject-forms of judgment. This class includes (a) indeterminate judgments, (b) singular judgments, (c) plural judgments.
- II. Predicate-forms of judgment. This class includes (a) narrative, (b) descriptive, and (c) explanatory judgments.
- III. Relation-forms of judgment. This, the most important class, includes (a) judgments of identity, (b) judgments of supra- or infra-ordination, (c) judgments of coordination or dependence.
- IV. Validity-forms of judgment. This class includes (a) negative, (b) problematic, and (c) apodictic judgments.⁴

³ A simplification of Bosanquet's view, betraying also the influence of Bradley, is given by Creighton, who divides judgments into (1) qualitative, (2) quantitative, (3) causal, (4) individual, or judgments of individuality.

⁴ The validity-group is not intended by Wundt to be coordinate with the other groups. It includes important sub-forms which belong to all three other groups—negative judgments, for instance, are found in all three classes. (*Logik*, 3e Aufl., I., pp. 165 ff.)

For Erdmann, on the other hand, our logical thought is immanent in the objects themselves, and judgment is the attempt to formulate in terms of the predicative relation objective relations in the real world. There is, however, no single principle for dividing the different types of judgment as such, and in order to be just to the empirical facts, Erdmann divides judgments into the following groups:

I. Simple judgments.

- (a) Judgments which express "real" relations. This group includes (1) formal, (2) attributive, (3) causal judgments.
- (b) Judgments which express "ideal" relations. This group includes (1) judgments about grammatical relations, (2) judgments of similarity, (3) normative and value judgments.

From another view-point, simple judgments are divided into:

- (c) Content-judgments. These are either (1) individual, or (2) general.
- (d) Extent-judgments. These are either (1) particular, or (2) universal.

Finally, the syncopated forms of judgment, such as the "impersonals," are regarded as a class of simple judgments.

II. Complex judgments.

- (a) Combinations of judgments. This group includes (1) copulative, (2) conjunctive, (3) divisive judgments.
- (b) Judgments about judgments (*Beurteilungen*). This group includes (1) negative, and (2) modal judgments.
- (c) More complex forms. This group includes (1) hypothetical, and (2) disjunctive judgments.

Finally, perhaps we may mention what we find in the logic of the pragmatist school. For this school judgment is instrumental. Its function is to construct, justify, and refine experience into exact instruments for the direction and control of future experiences through action. There are all grades of development from the crudest to the most expert forms. Three typical stages seem to be recognized: (1) impersonal, (2) reflective, (3) intuitive. By the intuitive stage of thought is meant the unhesitating efficiency which results in complete control of action, an efficiency arising within a certain sphere of action through constant, intelligent use and practise.⁵

⁵ See esp. S. F. McLennan, *Typical Stages in the Development of Judgment*, in Dewey's *Studies in Logical Theory*. Also Dewey, *Experimental Logic*, Ch. VI. A somewhat similar general attitude is taken by the "personal idealist," Henry Sturt, in *Principles of Understanding*.

II

If the preceding instances may be regarded as representative, we can state that in modern logic, so far as concerns the division of judgments, three main tendencies are present. In the first place we have the view that judgment is one and one only, and as such excludes the conception of essentially different forms or types. Affirmative and negative, categorical and hypothetical, represent variations of emphasis merely, different aspects of one and the same fact, *viz.*, that judgment is a systematic totality. For this view, no logical division of judgments is possible, and indeed, in the end, there seems to be only one judgment.

In the second place, while equally insisting upon the unity of judgment, considered from this ideal view-point, many writers accept a quasi-Hegelian view of the self-evolution of logical thought, and distinguish, in the process which leads from the primitive, superficial grasp of externals to the final profound apprehension of the systematic totality of the real—or at least of the thinkable—a number of *stages* rather than coordinate forms. As a rule, no insistence is made upon the exact number of stages to be accepted by logicians. It appears to be a matter of convenience, and the aim is merely to indicate in a concrete way the progressive nature of thought in its evolution, and the rich variety of its products.⁶

In the third place we have the view of writers like Erdmann, writers who regard judgment as the (predicative) apprehension of what is logically immanent in the relations of real objects, and while on the one hand insisting that there is no single principle in the nature of judgment as such which could serve as a *fundamentum divisionis*, in practise divide judgments on the basis of the differences of objective relations. Thus, a judgment about mathematical relations belongs to a different class from judgments modeled on the relation of a thing to one of its qualities, or from judgments which move within the system of inter-relations which constitutes grammar. In fact, it is less a division of judgments than a division of objects.

Our only possible conclusion is that modern logic recognizes no logical division of judgments into coordinate types or species. Logically, judgment is one and indivisible, and we can regard this question as settled. The only question which remains to be solved is how to deal with the mass of diverse-appearing material in a manner which shall be at the same time convenient and just. Hitherto two

⁶ So Bosanquet and Creighton. Lotze, however, regards the categorical, hypothetical, and disjunctive forms as "essentially different" (*Logik*, pp. 38, 41). Boyce Gibson accepts these forms, but reverses the order of the last two (*Problem of Logic*, pp. 111-112).

solutions have been proposed. The first consists in recognizing a number of stages in the self-evolution of thought. The second consists in recognizing differences in the objects about which we judge. Does either of these suggestions possess superiority over the other?

Let us consider. In the literature, no writer attempts to base his distinctions *solely* upon objective differences. Bosanquet and Creighton, for instance, deal with judgments of quality, *i. e.*, apprehension of mathematical relations, with apprehension of causal relations, and finally of the systematic inter-relation of parts within a whole which Creighton calls judgments of individuality. The relations are "objective," but the arrangement of them in "series" is based upon the distinction between superficial and profound. The qualitative aspect which is open to sense-perception does not go so deeply into the nature of the object as the mathematical intelligence which grasps quantitative relations. Causal relations go still deeper, and when we apprehend the object from the view-point of the whole, as one element in an organized totality, we have gone as far as is possible.⁷ So too the pragmatist arranges the forms of judgment recognized by him into stages from the more crude to the more efficient, and even Erdmann, who more than any other writer insists upon the objective nature of the relations which he recognizes, arranges judgments in an order from the simpler to the more complex. We must, however, admit that Erdmann dissociates himself from those who arrange judgments according to stages of progressive insight. On the whole, then, if we consider the nature of the case as well as its treatment in the literature, we must realize that relations between objects are at least as numerous and incalculable as the objects themselves, and that consequently, as a basis for dividing up the field of concrete judgments, the method of recognizing "stages," whether of insight or efficiency, is preferable, at least from the standpoint of convenience.

Let us examine this distinction a little more closely. It is not a logical distinction, based on "specific differences within the essence" of judgment. As we have seen, modern logic repudiates such a conception. If the distinction is not logical, what is it? It deals with the process-side of knowledge. On what does this process depend? A process always involves two factors, and it is their mixture in varying proportions which results in the various stages of the thought-evolution. What, then, are these two factors? What is the factor whose predominance makes the judgment crude or superficial?

⁷ So too Lotze, Hibben, Boyce Gibson, *etc.* On the subject of "individuality," which corresponds to some extent with what Lotze and Bosanquet regard as the field of disjunctive judgment, *cf.* also Bradley, *Princ. of Logic*, pp. 447 (§ 26), pp. 449-451 (§§ 29-30).

What is the other factor, whose predominance makes the judgment efficient or profound? Under various disguises, the two factors turn out to be sense and intellect, and the basis of distinction is psychological, as indeed we might expect in dealing with the process-side of knowledge.⁸ The judgment of quality is, in psychological language, the judgment of perception, and all the other types recognized in modern logic are judgments which, while still retaining some thread of connection with sense-perception, are transformed into something more "profound" by the degree to which the intellectual standards of identity, difference, and systematic organization are brought to bear in clearing up their content. The final case—what Creighton calls "judgments of individuality"—can hardly, perhaps, be realized. For there is always a gap between what sense can give and what our uncompromising intellectual standards demand. But in one form or another, approximations to such judgments represent a perpetual recurring human demand, and thus deserve to be recognized in logic.

So far, then, our conclusion is, that judgments can not be divided upon a logical, but only upon a psychological basis. It remains to ask, how this psychological distinction of "stages" should be worked out in detail. Hitherto we have considered only a dualistic attempt to combine two bases, (1) the psychological, and (2) some objective classification of real relations. But this is to introduce all the difficulties of dualism and heterogeneity, and it commends itself to recognize frankly the psychological nature of our method. If it is possible, if such a division can be carried through, two questions only can be asked: (1) Is it convenient? (2) Is it just to the empirical facts? That it is possible is explicitly recognized by Erdmann, who furnishes us with a somewhat elaborate specimen of the way in which it can be done. He insists that his treatment is just to all the empirical facts, for there is not a single judgment of the group which he regards as "logically" divided but can find a place somewhere in the psychological scheme,⁹ but it remains a question, how far his

⁸ Cf. e. g., Bradley, *op. cit.*, pp. 440 ff. The "psychological" basis belongs, as Erdmann points out, to a psychology *durch logische Gesichtspunkte normirt*.

⁹ The scheme is: I. Analytic judgments. (a) Original (judgments of perception, direct judgments of experience, symbolic judgments of experience). (b) Derivative (memory judgments, imagination-judgments, abstract judgments). II. Constructive judgments. (a) Judgments communicated to us by others, through language. (b) Judgments thought out by us for ourselves. After the work of Bradley and Bosanquet in showing that analysis and synthesis are two sides of the same process, it does not seem possible to maintain Erdmann's distinction of the two great classes. And, in any case, the distinction between II. (a) and II. (b), however useful for immediately practical purposes,

scheme is convenient. In fact, just as, in the attempts to work out the dualistic division, Creighton's version is undeniably more convenient than Bosanquet's, so our problem here seems to be to construct a scheme which shall be more convenient than Erdmann's, while retaining what is essential in its view-point.

III

To this end I would suggest the following division of the field of judgment, on the basis of the comparative predominance of sensory and intellectual elements:

- Stage I. Judgments of perception. Examples: It is warm. This paper is white. This tree is higher than that.¹⁰
- Stage II. Judgments of experience. Examples: Children are a joy. Everywhere you see grain elevators. A thick rug under the feet prevents chilblains. The freight-trains are growing more troublesome every year.¹¹
- Stage III. Symbolic judgments. Examples: Socrates was put to death for political reasons. Sea-sickness depends upon the functioning of the semi-circular canals. Not more than one man in a thousand would vote for that programme. $x^2 - y^2 = (x + y)(x - y)$.¹²
- Stage IV. Transcendent judgments. Examples: The prince now possessed the magic sword, the cap of darkness, and the seven-league boots. Oh! for a mansion in the skies! I am the master of my fate, I am the captain of my soul. Life *means* more life, life without end or limit—immortality. Time and space are unreal, mere forms of sensibility, which disguise the real. Things-in-themselves are knowable (or unknowable).

A brief explanation of the above distinctions is perhaps necessary. A judgment of experience differs from the perceptual judgment, in that it depends more on memory or previous perceptions than on direct present perception. It is more complex, and sums up many previous experiences, as a composite photograph gives us the hardly commends itself to strict theory. Wundt seems to object in principle to the psychological analysis of judgments (*Logik*, 3e Aufl., I., p. 74).

¹⁰ Judgments of perception correspond to Erdmann's judgments of perception and the qualitative judgments recognized by Bosanquet and Creighton.

¹¹ Judgments of experience correspond to Erdmann's judgments of direct experience. In the case of both perceptual and experiential judgments, however, Erdmann's distinction between analytic and constructive is dropped.

¹² This corresponds partly to Erdmann's symbolic judgments of experience, but includes also what he calls judgments of imagination and abstract judgments, in part. The other part of Erdmann's class of abstract judgments is included in our class of transcendent judgments.

result of many direct likenesses of actual persons. It looks before and after, and loosens our thought slightly from its sensory moorings. But the distinction is a matter of more or less only. Where the sensory element of direct perception predominates, we have the perceptual judgment. Where the intellectual element of summing up many experiences predominates, we have the judgment of experience.

The symbolic judgment differs from the judgment of experience in that it extends our knowledge beyond the field of actual experience. It constructs, on the analogy of experiential types, new objects of similar type, objects which we might possibly experience (or have experienced), but which we have in fact not actually experienced. Our knowledge of Socrates is indirect, a highly intellectual construction which extends far beyond the field of actual sense-experience. Most of our forecastings of the future and all of our scientific laws belong to this group. They are formed by the introduction, into the sensory consciousness, of intellectual standards which enable us to construct systems valid, not merely for actual experience (which is past), but for possible human experience. It is unnecessary to point out, perhaps, that the transition between experiential and symbolic judgments is gradual.

The transcendent judgment is an attempt to extend the field of symbolic judgment beyond the limits of human experience, actual or possible. In the symbolic judgment, our object is always something which might conceivably be experienced (or have been experienced). But in the transcendent judgment, the object could never be experienced. Such judgments are both natural and common. Consider, for example, the ever-recurring interest in mysticism, the medieval search for the philosopher's stone, the inventor's fascination in the case of perpetual motion, the still not uncommon belief that one can read destiny by the lines in the palm, if not by the conjunctions of the heavenly bodies. So too in every walk of life, the human yearning after some ineffable ideal, some unspeakable perfection—the "vision" (as we call it) of ideal truth, power, love, or happiness—leads us insensibly and inevitably beyond the narrow confines of possible experience.

The above types exhaust the field of human thought. They represent four stages of judgment, distinguished from one another only relatively, according as the perceptual or the intellectual element predominates. The simplest judgments of perception exemplify, to *some* extent, the operation of the elaborative, idealizing tendency of intellect; and the most transcendent judgments we can make, the finest thought-webs we can spin, are still attached to earth by *some*

sensory threads, gilded o'er by the warmth of personal feeling and personal sense-experience. A pure intellect and a pure sensation are equally beyond our human thought. All our thinking moves within these two extremes, and partakes of both principles in varying proportions.¹³

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[*Note:* The following list of references is not intended to be exhaustive; nor does it claim for all the references first-rate importance or equal value. It has been made up by fusing the separate lists contributed by the several leaders. Hence it may perhaps be said of every item that at least one of the leaders has had it in mind in mak-

¹³ This fourfold division of the field of thought into "stages" is not entirely novel. It corresponds, roughly, to Plato's four stages of intelligence. (*Republic*, vi, pp. 509 ff.) Bosanquet explicitly objects to this mode of division, as being too simple for the empirical facts. For Plato intends it not merely as a psychological division, but also as a division of objects. But we have rejected the attempt to classify objective relations, and advocate the distinction of stages purely on a psychological basis, as (1) convenient, and (2) sufficiently inclusive to be just to the empirical facts.

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ing his contribution. Collectively the list may serve as a guide for orientation on the present state of the issue between Mechanism and Vitalism. Almost all the books and articles in this list contain references to additional literature.—R. F. A. H.]

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REVIEWS AND ABSTRACTS OF LITERATURE

Problems of the Self. JOHN LAIRD. London: Macmillan and Co., Ltd. 1917. Pp. xii + 375.

In a recent number of the *Unpopular Review* there is a criticism, well supported by quotation, and for the most part well deserved, on the obscurity, the wilful obscurity of philosophers. There are, however, some of the old masters who belie this report, and occasionally our contemporaries deign to express themselves in language that can be understood. One example of this greatly desired trait is Professor Laird's *Problems of the Self*. Indeed, so clearly and comprehensibly is it written that, barring one or two chapters, it could be read with interest even by those guiltless of technical philosophical study. Part of this clearness is due to a careful discrimination and explanation of terms. There is detailed analysis of the different senses in which important words have been used, and clear statement of the sense in which the author intends to use them. Another characteristic which makes the book a pleasure to read is its constant use of summary and forecast, the statement of the point reached in the argument, together with the line to be followed in its further development.

Professor Laird's theme lies in the question, "What is the Self?"

It is a question badly in need of asking and of full and free discussion. Convictions, opinions and prejudices, openly expressed or lurking as tacit presuppositions in our philosophical literature, are of the greatest variety, ranging from the denial that the self is anything more than a verbal abstraction to the assertion that it is the only reality, eternal, unchangeable, and frequently unknowable. The whole subject has long been greatly in need of the thorough overhauling that is here given it, and if there are more questions raised than answered, this but justifies the title of the book.

In all questions concerning the self, Professor Laird takes his stand firmly on introspection as the only unchallengeable authority. Whether the self prove eventually to be more, or less, than experience, its study must start with an analysis of experience as it is found. The first problem is, therefore, "to consider, as precisely as possible, what experiences are, and then to discuss their relation to, or their union in, the self."¹ In accepting the traditional division of consciousness into "cognition, endeavor, and feeling," Professor Laird provides a careful analysis of what is covered by each of these terms. In no case must experience be understood to include the objects of experience. In common with many other modern realists, Professor Laird emphasizes strongly the distinction between the act of being aware and the object of the awareness. The act is a part of consciousness, but the object is a "presentation," which is neither mental nor physical. The argument seems based on the apparent absurdity of saying that the mind, when viewing, for instance, an old cathedral, is gray and stony. But is this not, after all, a merely verbal *impasse*? Is it not simpler and closer to introspection to say that what is found in perception is not the conscious act plus a presentation, which is produced somehow by the cooperation of the mind and the physical object, but rather a direct relation between subject and object, the self modified in certain definite ways in response to an outside stimulus?

This distinction between act and object is, however, necessary, if cognition is to be brought into line with endeavor and feeling defined as acts of reference to an object. "The primary and fundamental characteristic of a conscious experience is its reference to an object. This, I think, is the only common characteristic of that which is psychical."² This definition of consciousness is still open to question, even after Professor Laird's detailed argument in its favor. It does not sufficiently differentiate conscious facts from some that are not usually considered such. Magnetic attraction, for example, might easily be defined as motion in reference to an object,

¹ P. 14.

² P. 33.

and the tropisms of plants are essentially acts of reference to the stimuli. This definition also results in rather unsatisfactory descriptions of some psychical facts, perception as has been suggested, and physical pain in particular. The act of feeling the pain must be considered as something different from the pain felt. The latter, the presentation, standing midway between the cause, which is physical, and the feeling, which is psychical, is itself neither fish, flesh, nor good red herring.

The analysis of experience shows that it is composed of these various acts of reference, not existing separately or independently, but "fused and blended together." It is this mass, of feeling, will, and cognition, of present, past, and future, of clear consciousness, marginal consciousness, and subconsciousness, which makes up the self. "Detached experiences, if they exist, are not a self. To be parts of a self they must conspire together with other experiences to form an individual, continuous unity."³ Professor Laird shows convincingly that the self is not primarily willing or feeling or knowing, but is essentially a whole, of which these phases are convenient but superficial abstractions. The main problem, then, is to discover the underlying principle of this unity. It is necessary, however, to guard against exaggerating the degree of unity and continuity found in normal selves. There is unity, but there is also discord and self-contradiction; there is continuity, in memory, in habits and dispositions, but there is also forgetfulness, and sometimes abrupt change in character. The precise degree of unity and continuity essential to a self tends to become a matter of definition. There would seem to be groups of loosely organized experiences below the grade of selfhood; and self, again, is a wider term than personality which implies purpose and responsibility.

If Professor Laird's conclusion, his solution of the problem, is the least persuasive part of his book, this is, perhaps, not surprising. Solutions have a way of satisfying only their fashioners. The explanation of the nature of soul or self begins with its traditional definition as an immaterial substance, existing in time. "Immaterial" is rejected as a purely negative characteristic, "existing in time" assumes the reality of time which is not here under discussion. This leaves us with "substance" alone as the definition of soul, and the meaning of substance must be ascertained. After a discussion of other senses in which it is used, substance is interpreted as "existent reality." Reality, which means objectivity, "controlling or limiting thought," is a much wider term than existence. According to Professor Laird, existence refers to those realities of which we have evidence through the senses. This definition, though frankly

elevating chimeras, centaurs and the phantoms of our dreams to the rank of existent realities, might be accepted if it could bring order into the generally chaotic conceptions of existence and reality. But, as Professor Laird admits, it is not a great help in the argument, since it is practically supplanted by the conception of the "particular." This means, first, not a universal, second, having a specific unity of its qualities, which constitutes its form, and, third, including matter, "stuff," as well as form. In the case of physical things this matter, or "raw material," is dependent for definition on the point of view. Iron, which is substance from one standpoint, is matter from another.⁴ The matter of which the soul or self is composed is experience. "The fact that there are selves is the fact that every experience forms part, and must form part, of an individual, specific, particular unity."⁵ This unity, however, must not be interpreted too literally. The unity of a certain definite train of thought or action is much more close and meaningful than that of the self of which it is a part. The experiences are substances which exist as part of the other substance, the self. "The existence of all of them in a unity through time (though perhaps with intervals) is the soul, the psychical substance."

It is difficult to see how, except in form, this conception differs from that of the "psychology without a soul," which Professor Laird apparently rejects. It does not differentiate between a self and a single experience, or between a self and a society of selves, except by the difference in the amount of material organized. Even the most radical critic of the conception of self would admit that there is a certain degree of unity in one person's experience. The argument against considering the body as part of the self by no means disproves the possibility that the body or the nervous system might be the basis of this unity. He offers no alternative unifying principle beyond the fact that the unity exists.

Perhaps the most characteristic, and certainly one of the most interesting, features of *Problems of the Self* is its large-minded tolerance of unsettled issues. This results in frequent suggestion of interesting bypaths for research or argument. The discussion of multiple personality is brief but clear and pertinent.⁶ The possibility that the same experience may be shared by different selves; that the soul might have an intermittent rather than absolutely continuous existence; the criticism of monistic idealism on the ground that the more inclusive unity is also the less organized and less meaningful; the relation between identity and change: all are touched upon more or less lightly, but suggestively and without prejudgment.⁷ There is

⁴ P. 347.

⁵ P. 366.

⁶ Chap. 11.

little dogmatism and no narrow prejudice, but an evident willingness to consider all ideas and theories on their own ground.

FLORA I. MACKINNON.

ST. CATHERINES, ONTARIO.

Epistemology. P. COFFEY. London: Longmans, Green and Co. 1917. Vol. I., pp. xiv + 374. Vol. II., pp. viii + 376.

This book is an excellent example of the sort of work being done at Maynooth, Stonyhurst, and Louvain by the reviewers of scholasticism. It is dedicated to Cardinal Mercier and, in spite of slight divergences, is typical of the standpoint of the school of which he was the patron. In other words, it represents Thomism or moderate realism, a view encouraged by Leo XIII.

After carefully reading the present volumes, the reviewer must admit that he has been impressed by the wealth of reading implied by the topics examined and the references given. While not competent to judge the adequacy of the treatment of the Catholic literature on epistemology, he sees reason to hold that the author is completely at home in Neo-scholasticism. Moreover, Dr. Coffey has not neglected modern movements, although his references are seldom to periodical literature. He has evidently been impressed by Prichard's excellent work on Kant, with which he seems largely to agree. I can not help feeling that it is a good sign when a manual of this kind refers to James, Schiller, Wundt, Peirce, Dewey, Bergson and others of their kind. But the standpoint is frankly that of Aristotelian Scholasticism.

The contents of the first volume can be indicated only very briefly. In the Introduction he maintains that epistemology is really a part of metaphysics. Its function is to complete and consolidate metaphysics. The remaining chapters concern themselves with such enquiries as these: The Terms and Data of Epistemology, Its Scope and Instruments, Necessary Judgments, Moderate Realism, Extreme Realism, Nominalism, Conceptualism. It is to be noticed that he pays more attention to Kant than to any other modern thinker "because most of the modern theories draw their inspiration directly or indirectly from principles propounded in the *Critiques*."

What will strike the American reader, used to a brief manual, is the leisurely way in which all conceivably relevant topics are taken up and discussed *pro* and *con*. In many of these discussions there is evidenced good analytic ability and balance of mind. Thus, we have carefully worked out distinctions between irresistible certitude and freely formed convictions; between truth, error, and ignorance; between doubt, opinion, conviction, certitude, belief, and faith. Still

there is prolixity in much of this which would irk most readers. The atmosphere of the seminary lingers around it.

The definition of epistemological terms has been carried out very successfully. I have found the scholastic terminology well adapted for essential distinctions. Thus, such expressions as "*esse ideale*," "*esse intentionale*" and "*medium quo, in quo, per quod res cognoscitur*" are valuable. In harmony with this tradition of exactitude is the care with which various positions are named and classified. Berkeley's philosophy is described as acosmic or hyperphysical idealism; Hume's as pan-phenomenism, *etc.*

I am inclined to think that readers will find Chapters IX., X., and XI. the most interesting in this volume. The difference between modern and medieval nominalism is well brought out.

Volume II. falls into two parts, dealing with the problem of our knowledge of the external world, and with the criteria of truth, respectively. It is interesting to note that Jeannière defends mediate sense perception while Coffey argues for perceptionism. It would seem that, while scholasticism is consistently realistic, it is divided into these two camps. I must confess that I have more sympathy with mediatism. The *parti pris* of the writer comes to the surface in his treatment of evolutionary relativism.

This book is a scholarly piece of work and gives one a high opinion of the training given in the better Catholic seminaries. Yet one is constantly aware of the anti-naturalistic assumptions within which it is developed. It is practically taken for granted that intellectual capacities can have no evolutionary origin. But, until the mind-body problem is satisfactorily solved by modern science and philosophy, the naturalist can only point out his divergence.

R. W. SELLARS.

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JOURNALS AND NEW BOOKS.

PSYCHOLOGICAL REVIEW. March, 1918. *Psychology in Relation to the War*: MAJOR ROBERT M. YERKES (pp. 85-115).—Report of the work done by psychologists during the year 1917 in relation to the war. *An Experiment in Employment Psychology*: HENRY C. LINK (pp. 116-127):—The purpose of the experiment was to discover a set of tests which would guide the employment section of the Winchester Repeating Arms Company in selecting candidates for "shell inspection" and for "gauging shells for minimum and maximum head thickness." Eight tests were used. *Associative Aids: I. Their Relation to Learning, Retention, and Other*

Associations: H. B. REED (pp. 128-155).—The relation of the rate of learning to the rate of forgetting depends upon three conditions: (1) the character of the measure; (2) the character of the learning; (3) the character of the material. The distribution of the types of associative aids and of errors in learning has little agreement with that for free association because the former are a form of controlled association. *Simultaneous versus Successive Association*: SVEN FROEBERG (pp. 156-163).—Simultaneity of two experiences is not necessary for an association to be formed between them. An association may still be formed between two experiences where the first has already passed out of consciousness when the second one appears. *Discussion*: Miss Calkins's case of self against soul: MARY S. CASE, J. E. CREIGHTON, and MARY WHITON CALKINS (pp. 164-169). Espinoza, Roberto. *La Evolucion Democratica*. Santiago: Hume y Walker. 1918. Pp. viii + 350.

Koller, Armin Hajman. *The Theory of Environment*. Part I. Menasha, Wis.: George Bant Publishing Co. Pp. 104. \$1.00.

NOTES AND NEWS

To the Editors of the Journal of Philosophy:

I HAVE read with much interest Dr. Bode's *Consciousness as Behavior*,¹ in which he refers to certain parts of my article on *Behavior* previously published.² I find myself in the main in agreement with Dr. Bode's remarks in regard to interpretation. I may note, however, that if a lover were to limit his consideration of James's "automatic sweetheart" to an objective view, as he should properly do if he were a behaviorist, I fear he would find it difficult to accommodate his acts to hers. His knowledge of the workings of the complex organic system under observation is altogether inadequate to point the way to such accommodations.

If, however, he assumes that all special changes in her behavior correspond with equally special changes in her consciousness; then the discovery, by indirect interpretation, of certain changes in her consciousness may enable him to make accommodative changes in his own consciousness which will correspond with accommodative future acts of his own.

This, however, is apart from the point I had hoped to make clear. I may put it in the form of a question. Does Dr. Bode hold, or does he not hold, that "Consciousness . . . is just a future adaptation that has been set to work to bring about its own realization"?³ It

¹ This JOURNAL, Vol. XV., p. 449.

² This JOURNAL, Vol. XV., p. 258.

³ Cf. *Creative Intelligence*, p. 244. Italics mine.

may be possible to maintain that consciousness corresponds with a future adaptation of this nature; but that is a tenet very different from the one stated in the quotation just made. If Dr. Bode answers this question in the affirmative, then it appears to me that he too, as well as Dr. Watson, "is dealing with an obfuscation that can not but be deplored."

HENRY RUTGERS MARSHALL.

NEW YORK.

RECOGNIZING that there can be no international peace until the great enemy of internationalism is defeated, the trustees of the Carnegie Endowment for International Peace have voted to put all its resources at the service of the government of the United States in order to assist in the preparation of a matured and constructive policy when peace shall be possible. The following is from the printed announcement:

"The Endowment has accordingly sought to bring about due preparation in two ways. In the first place, it has published or contributed to the publication of a series of works which furnish the same kind of foundation for effective consideration of the questions which will arise in a Peace Conference that Madison's Notes and Elliot's Debates, and the Federalist, and the earlier history of the development of Constitutional Law in the United States furnish for the consideration of inter-state questions in America. Until this publication many of these works were inaccessible and not widely known.

The other method of contributing to this preparation has been through active cooperation with the officers of the government whose official positions will throw upon them responsibility for the representation of the United States in the Peace Conference. At the meeting of April 19, 1917, the Board of Trustees adopted the following resolution:

Resolved, That the Carnegie Endowment for International Peace offers to the government the services of its Division of International Law, its personnel and equipment, for dealing with the pressure of international business incident to the war.

That offer was accepted; and in effect the entire personnel and plant of the Division of International Law is being used by the government, and the activities of this institution are practically serving the government in making real, thorough, and scientific preparation for exercising the influence of the United States after the close of the war, and that activity is taking the place of agitation for peace, which we abjure until the war is won."

DR. MABEL FERNALD, formerly diagnostician in the Social Hygiene Laboratory at Bedford Hills Reformatory, N. Y., and Dr. Margaret Cobb have received appointments to the Army Medical Department at Washington.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

HISTORY, PSYCHOLOGY AND CULTURE: A SET OF CATEGORIES FOR AN INTRODUCTION TO SOCIAL SCIENCE

DEDICATION: TO MY DEAR FRIEND, THE LATE HERMAN K. HAEBERLIN.

IDEALIST BY NATURE, SCIENTIST BY TRAINING, PHILOSOPHER BY
ASPIRATION, HE DWELT AMONG US, PURE AS THE DAY. IT
CAN NOT BE THAT HE SHOULD BE NO MORE.

INTRODUCTION

PART I

I

A GLANCE at the history of the sciences readily reveals two ever-recurring processes. On the one hand, certain problems demand consideration again and again, because the facts which underlie them are always there, and with increasing knowledge and insight there becomes necessary a more or less frequent revision, restatement and reconceptualization of these facts. On the other hand, the domain of experience is being constantly subdivided into groups of facts which are being taken care of by one or another special science or branch of a science. Just what part of the data of experience thus falls to the share of a science depends on a multiplicity of factors: social conditions, particular historic settings, individual idiosyncrasy, and the emergence of special methods.

While the two processes noted above flow naturally from the very circumstances involved, and are thus likely to persist in the future as they have in the past, there lurk behind these two modes of intellectual approach certain dangers for scientific progress, dangers not always easy to avoid. Thus it might occur, and indeed has often occurred, that the problems of facts and their interpretations become confused through the emergence of issues of a wholly extraneous order, issues growing out of the fluctuating contents and the mutual relations of the special sciences. As a result of this, overlappings will arise between the domains of two or more sciences,

leading to somewhat distracting variations and discrepancies in the treatment of identical facts. Again, gaps may appear in the treatment, in so far as all of the sciences concerned may for common or disparate reasons shirk the task of attending to certain aspects of the facts. But a still further danger, more serious than either of the two mentioned, lies in the possibility that the theoretical problems involved, those of systematization and conceptualization, may become confused, matters of pure terminology gaining undue prominence, and the entire field of investigation acquiring that character of indefiniteness and futility which is wont to sap enthusiasm and discourage research.

These remarks are applicable to the relatively recent developments in the domain of the facts and the sciences referring to the psychic, the social and the historical. Even the domain of biology is involved, although less markedly so. Discussions of the proper contents and limits of the different sciences have gained undue prominence, leading, as might be expected, to vast differences of opinion. There is no agreement, for instance, as to what is to be regarded the proper domain and method of history. The history of an Edward Meyer, with its ideal of a quasi-mechanical recorder of chronologized facts and events, is not the subjectively sensed and artistically transformed history of a Ranke, nor are either like the discriminatingly psychologized and harmoniously ordered history of a Lamprecht. As a fact, this discrepancy in method and ideology is interesting and instructive, but as a basis for acrimonious discussions as to the proper field, method, and purpose of history, it becomes futile and distracting. Similarly in sociology, an ever-popular topic is the content, scope, and limits of the science. Thus, according to some sociologists, their science constitutes the fundamental theoretical basis of social phenomena, while others see in it the sum-total of all social sciences, and still others regard as its proper domain the investigation of a particular social process, namely that of socialization. Psychology, again, after a long career as an analytical science relying essentially on introspection for its concrete material and restricting its scope in the main to the study of the individual, has, on the one hand, come to embrace ever-increasing portions of the social field, and, on the other hand, lured by the attractive results of experimental technique and statistical rigor, has gradually turned its back on the subjective side of its one-time material, until, in the most extreme forms of behaviorism, the science of the mind aspires to reach higher rank as a science by denying the relevancy of mind as such, while grudgingly accepting its very existence.

The situation being as presented, it seems hazardous to venture a

discussion of our subject,—the relations of history, psychology, and culture,—on the basis of one or the other of the accepted conceptions as to the content, scope and method of the sciences of the mind and of society. Instead, it might prove illuminating to turn to the facts themselves, and, disregarding the differentiations of the special sciences, to attempt an analytical conceptualization of the relations of such facts.

II

An examination of a set of social data, as presented by the historic record or by modern conditions, naturally leads to three questions: What kind of data are they? How are they related to one another in time? And what is the connection between them? This suggests three standpoints from which the data can be envisaged: the standpoint of *level* results in two sets of data, objective and psychological; the standpoint of *time* gives another two sets, successive (or historical, in the narrowest sense) and contemporaneous (or coexistential) data; and still another two sets are contributed by the standpoint of connection or *linkage*: the deterministic and the accidental. To represent this grouping of the data in tabular form:

Level	{ Objective. Psychological.
Time	{ Historical (Successive). Contemporaneous (Coexistential).
Linkage	{ Deterministic. Accidental.

All of these terms allow of multiple interpretation and have been used with varying connotations in different sciences or even by different writers. Hence, the terms must be defined for the purposes of the following discussion. The terms then will be given these meanings:

Objective = external (non-psychological), describable in terms of outward behavior.

Psychological = in the psychic level, referring to processes which occur in minds (whether the individual or the social aspect is stressed is in this context irrelevant). *N. B.* "Psychological" does not mean "amenable to the methods of the science of psychology," or anything else of that sort.

Historical = chronologically successive.

Contemporaneous = chronologically coexistential.

Before the last two concepts, deterministic and accidental, can be

defined, a subsidiary concept must be introduced, that of a *system*. In a cosmic sense, every event, whether physical, psychic, or social, is absolutely determined: its character, and the time and place of its occurrence are inevitably fixed by the immediately antecedent events. In a cosmic sense, then, no event is accidental (undetermined or partially determined). Moreover, every event is in innumerable ways linked with all contemporaneous and all antecedent events. This, however, is nothing but an expression of our positive or naturalistic philosophy: permit one event to run amuck, and the entire Universe runs with it.¹ A radically different attitude must be assumed, when any particular set of events is being examined from the standpoint of their connection or linkage. We have long been accustomed, even when the events in question belong to the physical order, to disregard certain connections of such events. If the connections do not count from the standpoint of the issues involved in the set of events under examination (the system), we disregard them: they are not significant. The following may serve as an illustration. I drop my pen. The resulting vibrations are communicated through the table to the floor, the walls, the earth. They reach Europe and are imparted to a French gun which at that moment is being fired at a German target. The aim of the gun is changed, and the projectile will hit the target at a spot removed by an infinitesimal fraction of an inch from that which would have been hit had the vibrations not taken place, had the pen not been dropped by the writer. Now, if we are concerned with the system gun-aim-shot-hit-explosion-damage-to-target, we shall completely disregard the vibrations resulting from the dropping of the pen: their effect, while real, is not of slight significance, but of no significance whatsoever. On the other hand, supposing it is true that the shocks accompanying the discharge of the German gun bombarding Paris from a distance of seventy-five miles have been registered by the seismographs of this country in the form of exceedingly small dots. Now, if we are examining the extent of the measurable vibrations caused by the detonation of the monster gun, or the delicacy of the seismographic instruments, or the relations of the vibrations thus caused to those resulting from a distant earthquake, the data are not only real, but in the limits of the system also significant, not relatively but absolutely so, as significant as any other measurable effect of the distant detonations.

This concept of a *system* is of the greatest importance, if we are to estimate properly the deterministic and the accidental factors in

¹ I am aware that other cosmic philosophies are conceivable and have, in fact, been propounded, of which the concept of accident plays an integral part; in connection with the argument in the text, however, it did not seem necessary to refer more specifically to such alternative cosmic philosophies.

the historic process. From the cosmic standpoint, as we have seen, the historic event is no less irrevocably determined as to content, place, and time, than any other kind of event, nor is any event accidental; which is indeed but a necessary negative correlate of the preceding positive assertion. But if the interest centers on a particular historic group, with its own system of specially intimate relations between its elements, then, within the limits of such a system, certain determinisms may also be observed. In the domain of historic phenomena, such determinisms are, as will be shown, never absolute, but relative, limited. These determinisms are really tendencies, the particular aspects of which are co-determined by things or events having their origin in other systems, and the intrusion of which in the first system must, from the point of view of that system, be regarded as accidental.

In the light of the preceding remarks, the two remaining terms can be defined:

Deterministic = more or less definitely determined within a relatively closed system of historic (or cultural) relations. The term as used has no relation to any philosophical view of the Universe.

Accidental = coming into a system *a* from without, from another system *b*; hence, from the point of view of system *a* relatively undetermined and unforeseeable. The term, like the preceding one, has no wider philosophical implications, nor does it mean "uncaused."

Returning now to the six concepts grouped into pairs from the standpoints of level, time, and linkage, it will be observed that the historical and the contemporaneous series are equally distinguishable in the objective and the psychological levels, in the deterministic and the accidental forms of linkage. The result is eight categories, which represent angles of vision for culture and the historic process. The categories are:

1. Objective—Historical.
2. Objective—Contemporaneous
3. Psychological—Historical.
4. Psychological—Contemporaneous.
5. Deterministic—Historical.
6. Deterministic—Contemporaneous.
7. Accidental—Historical.
8. Accidental—Contemporaneous.

Some illustrative and explanatory comments will now be made on each of the above categories.

THE CATEGORIES

III

Objective-Historical Category.—This is history in the narrowest sense, the description or reconstruction of a successive series of past events. The limiting conception of history in this level would be a complete cinematographic and synchronous phonographic record of the past. The consistent social behaviorist would have to be satisfied with such a record, and build his science of society upon it. But fortunately enough no such consistently behavioristic sociologist or historian has as yet made his appearance. As a rule, either a strain of psychological insight or interpretation is surreptitiously permitted to shed its clarifying light on the stately but hollow row of behavioristic facts; or behaviorism is redefined so as to include more or less of the content of the older socio-psychological material. However that may be, the limitations of the purely objective view with reference to the successive series of events appear most clearly in the work of those who have most enthusiastically embraced the standpoint of historical behaviorism. Moreover, they have never lived up to their thesis. Edward Meyer's historic sense has constantly carried him beyond the purely objective narrative he so insistently advocates. As to Ranke, his "*wie es eigentlich gewesen*" is scarcely ever just that, but mostly a highly subjective account with occasional flashes of truly artistic intuitive rendering of an event or an epoch. Graebner, the ethnologist, has gone as far as any one in his advocacy of a purely objective reconstruction of the past, but, as his critics had no difficulty in showing, his method is really most subjective. Moreover, he deals largely with the distribution of objects of material culture to which behaviorism is most applicable, although even here not without distinct reservations.

The objective-successive series of data certainly constitutes a distinct level in the historic record, of special importance in connection with the general conception of culture and with institutionalism,² but it is no less patent that even the most complete reconstruction, if comprising none but objective, external, behavioristic data, could at

² Those who insist on the social being a phenomenon *sui generis* and on culture being in its nature historical, base their opinion on a real fact. While the content of culture in so far as it counts, lies in the psychological level and can only be understood and interpreted through the attitudes and tendencies in that level, it can not be derived from it nor from the attitudes and tendencies imbedded in it. A psychological interpretation of a culture can explain its content (explanation here standing for interpretative description), but it can not account for it. This is a corollary of the fact that the cultural content is an heritage of the past, and that it is cumulative. This cumulation is an historical and an objective phenomenon.

most constitute but the beginning, not the end of our knowledge of the past.³

IV

Objective-Contemporaneous Category.—It comprises a series of objective coexistential facts and events. Any non-psychological record of pure enumeration, classification, representation, belongs to this category, such as a Who's Who, a city directory, a census, catalogues, photographs, maps, archives, codes, *etc.* The static series is supplemented by a dynamic series, which tells us what people do, what are their occupations, gatherings, feasts, ceremonies, lynchings, congresses, investigations, commissions, legal differences. It will again be noticed that here also it proves difficult to remain within the level of the purely objective, if a satisfactory record is desired. The domain of facts comprised in the above series, one static, one dynamic, will readily be recognized as the province of statistics. The lure of mathematical representation, with its highly creditable scientific pedigree, has doubtless had a great deal to do with the persistent effort to eliminate the psychological categories from the social field of investigation, and thus through the application of statistics, to reduce the study of society to a science. It is, however, a fact too well recognized to require specific illustration, that statistics, on its objective and mathematical side, presents at best but a rearrangement of the data. The data, thus marshalled, can not in themselves provide a solution to any social problem: they merely constitute a problem. In fact, the most signal merit of statistics consists perhaps in the very aptitude of that method to bring to the surface problems which otherwise might never be recognized. But the solution of such problems can only be reached within the level to which the data themselves belong, and thus falls to the lot of the sciences representing the conceptualizations of the particular set of data, whether this be biology, or psychology, or sociology. There is thus good common sense in the popular saying that statistics can be made to prove anything, implying that it is the interpretation of the statistical mate-

³ This theoretical standpoint can be given the following drastic formulation: Suppose the objective historic past were laid bare; it would then present no more than the material for the study of history (in the wider sense, and of culture. From the standpoint of methodology, however, the case for the objective record, especially in the domain of ethnology, stands much worse than is here hypothetically assumed as possible, for that record is full of gaps, which can only be filled by more or less speculative reconstruction, while the ethnological or cultural perspective for such reconstructions can only be achieved through the study of existing cultures in their totality, that is, including the interpretative illumination derived from the psychological level. Not to have realized this is perhaps Graebner's chief methodological error. (See his *Methode der Ethnologie*.)

rial which counts, and that, if the interpretation is arbitrary, the mathematical garb of the data is no guarantee of truth.

In the field of ethnology, Graebner has repeatedly made use of the objective-contemporaneous category in the stiff catalogues of objects and acts which, like dismembered bodies without joints or souls, constitute his culture areas. Clark Wissler, on the other hand, in his works on the culture of the Plains Indians, has illustrated convincingly the importance of the interrelations and interpretations of culture traits for an adequate characterization of an area. This achievement is the more conspicuous as the author, in a later work of a more ambitious character,⁴ returns to the catalogue method of culture depiction, with the inevitable accompaniment of a hollow Graebnerian twang.

V

Psychological-Historical Category.—Perhaps no set of cultural facts has received so much attention at the hands of students of history, culture historians, sociologists, and anthropologists as the successive series in the psychological level.

In the course of the recent discussions of the problems of diffusion of culture, the psychological setting has come in for its share of analysis. The mere statement that an object, belief, or institution has traveled from one tribe or nation to another gives but an inkling of what has occurred. The method of diffusion, the degree and rapidity of assimilation, are problems which inevitably introduce the psychological factor. When W. H. R. Rivers rightly observes that the very fact of contact of two cultures will often create a cultural feature which did not previously exist in either group, he puts his finger on a psychological element. When Paul Radin analyzes the peyote cult of the Winnebago Indians and points out how certain elements of Christian teaching and ritual were taken over whole, without undergoing much transformation, how certain other elements from the same source were changed beyond recognition through the reaction of the Indian ritualistic *milieu*, how still other Christian elements precipitated constructive shifts in the Indian rite and dogma, the author deals with psychological factors. The entire domain of culture history proper belongs here. Every attempt to reconstruct the history of art, literature, religion, philosophy, science, social movements, must deal largely with facts belonging to this category. All the volumes of Wundt's *Völkerpsychologie* as well as his *Elemente*, the latter perhaps contrary to his own intention, contain hosts of suggestive analyses of the historical-psychological series. Clearly also, the very basic principles underlying Wundt's

⁴ *The American Indian*, New York, 1917.

conception of the psychic and the social belong here. I mean the principle of the heterogeny of ends and that of the mutation of motives, which are but aspects of the wider principle, that of creative synthesis. While this author must be given credit for an incisive formulation and systematic elaboration of the above principle, the idea of the transvaluation of psychic values in history has, in its wider aspects, anteceded Wundt, and persists without bearing to any marked degree the stamp of the master's powerful influence. Illustrations in abundance await the one who would review the psychological connotations assumed in the course of the last few centuries by such concepts as kingship, liberty, manual labor, riches, drama, learning, heresy, efficiency, asceticism, purity, heroism. An interesting concept recently introduced into ethnology refers to facts of the psychological-historical category. I mean the concept of convergence. When two or more developmental processes which starting from disparate origins and proceeding along unlike but less discrepant paths result, at the final stage or at a point of cross-section, in cultural conditions or features that are comparable or at times even highly similar, the processes are designed as convergent. Although the concept of convergence may also be applied to purely material processes, with almost complete elimination of psychological elements, by far the more useful and significant application of the concept implies factors of the psychological-historical category, where the similarities in the final stages of the developmental processes involved are brought about through a gradual or even more or less sudden transvaluation of psychic values.⁵

It must be submitted without reservations that no interpretation of the historic process is possible, eschewing the facts of the psychological-historical category.

VI

Psychological-Contemporaneous Category.—The artificiality and dryness of a culture characterization based on pure enumeration of objective features has been commented upon before. In reality the different aspects or features of a culture are interrelated. The level of these interrelations is psychological, or psycho-sociological; what else, indeed, should it be? It is generally recognized,—except, perhaps, by the extreme behaviorist,—that it is the links between the different traits of a culture which constitute it an organic integer, not a mere aggregate of disparate traits. The concept of the so-called “cultural setting” belongs to this category. With refer-

⁵ Cf. the writer's “The Principle of Limited Possibilities in the Development of Culture,” *Journal of American Folk-Lore*, Vol. 26, 1913, especially the section on “The Limitation of Possibilities and Convergence,” pp. 270-280.

ence to any particular culture the content of the concept is a fluctuating one: any trait may be placed in the center of attention, and the rest of the culture will then, with reference to that trait, appear as an interpretative setting, the traits most intimately related to the one under examination standing in the foreground and practically determining its cultural orientation, while the other, less closely associated traits remain in the more or less negligible background or fringe. When another trait is of major interest, the cultural setting will thus to some extent be different; but it always belongs to the psychological-coexistential level.

Again, a culture, if of any complexity, and to some extent *any* culture, comprises groups of individuals each of which groups is, as a carrier of the culture, deeply saturated with a more or less limited set of its constituent elements, is superficially colored by some others, and remains wholly out of touch with still others. In all cultures of great complexity, such as are presented by modern civilizations or by those of the Ancient World, the latter category of constituent cultural elements is, with reference to any particular group of individuals, exceedingly large. If Lévy-Bruhl's concept of participation in its most general sense is introduced here, every culture will be seen to comprise a complex of mutually overlapping cycles of participation. The links holding together the elements of a cycle as well as the links between interrelated cycles belong to the psychological-coexistential level.

What one is wont to designate as the knowledge or understanding of a culture refers to facts and relations of this level. With reference to historic civilizations, but particularly the modern ones, our understanding along the lines suggested is of a high order, justifying even prediction, although perhaps not to the degree that might be inferred from the frequency of attempts in that direction. In the domain of primitive civilizations, on the other hand, the depth of our penetration is usually most insignificant, the reason being paucity of relevant psychological material, such as prolonged residence among a people and thorough familiarity with the language would supply, or at least, make possible. How many ethnologists, for example, would undertake to specify any number of phrases or situations that would in a particular primitive community be regarded as humorous, as a joke? This has been done in some instances, but their number is small.

Two types of attitudes, both belonging to the psychological-coexistential category, have at times been confused, while their precise relations to the category and to culture in general have often been misunderstood. I mean, on the one hand, the attitudes we have designated as the "cultural setting," on the other, what is known

among ethnologists as "secondary explanations." While the former comprise the psychological rationale of the culture of a group, the expression in psychological (or psycho-sociological) terms of the separate cultural traits as well as their inter-relations, the latter represent deliberate attempts on the part of the individuals of a group to furnish off-hand psychological or even historical interpretations of various features in their own culture. The significance of the concept of "cultural setting" has been commented upon above, as to "secondary explanations," while they present a cultural interest of their own, in so far as the study of them may throw interesting side-lights on the psychological attitudes of the group, contain also two other elements, that of naïve popular psychologizing and that of quasi-historical references which are contrary to fact. The social behaviorist in his more savage than discriminating attacks on the psycho-sociological interpreter of culture has often confused the conceptualizations involved in the "cultural setting" with the misleading psychological and historical vagaries of "secondary explanations."

A. A. GOLDENWEISER.

Continued.

POLITICS, PHILOSOPHY AND POETRY

THE PHILOSOPHER AND THE WORLD AFTER THE WAR

THE world after the war is going to need farmers and mechanics, architects and engineers, doctors and teachers, miners and mathematicians, and men of a hundred other trades and callings. Is it going to have any use for the philosopher? Or must the philosopher await a later and serener epoch of history in which to renew his cogitations upon the mystery of existence? As I put the question, there floats into my mind an odd image out of a story that I heard or read (for the life of me I can not remember where) years ago.

It is the image of a dwelling house, still uncapsized, whirling and plunging on the swollen surface of a flooded river. At a table in the attic of the house, unconscious that it has been torn from its foundation, sits a learned man, pen in hand, reflecting. On the table before him lies a sheet of paper to which at intervals he transfers his thoughts, a sheet which, in due season, will make one more in a high pile of similar manuscript at his left hand—the labor of a lifetime. But the learned man is not alone in the doomed house. Below in the kitchen is his wife, washing his shirt; and because her

work is work that she has done hundreds of times before she does it with her hands alone, her mind in the meantime running off into memories of early hopes that did not come true and dim wonderings as to whether, somewhere, in Spain or Heaven, the future may not have in store compensation for all she has lost. (And she goes and reads a verse from the Revelation of St. John the Divine and wipes a tear with her apron from her eye.) Thus, lost in reverie, she too remains unconscious of the catastrophe that has befallen the house, or, more concretely, of the fact that her husband will never have occasion to wear the garment she is rubbing to such an immaculate whiteness.

Now this story, or glimpse into a story—though I never realized it before—is a prophecy of our own society caught in the convulsion of forces over which it has no control. Indeed, as one thinks it over, it is astonishing to see how many aspects of life at the outbreak of the war it symbolizes. So regarded, not the least interesting question it suggests is whether the unconsciousness of reality and consequent unpreparedness of the learned man and his wife for what was coming were due to their living too wide or too narrow a life. At first thought it would seem as if the man were living too wide and his wife too narrow a life. Because his thoughts had wandered into the realm of cosmic floods and currents, a region where tides are so mighty that they pick up a solar system as a spring freshet picks up a chip, he forgot to notice the relatively tiny terrestrial flood outside his window. Because his wife was bent over her little world of water in a tub, she forgot to notice the vast world of water that was lifting the house in which she dwelt as easily as she could lift a bucket. All this is true. But the reverse of it is equally true. The learned man was in too small as well as in too large a world. Because he inhabited a realm bounded by his inkstand and his manuscript and his shelf of books, or at most by the four walls of his attic, he lost account of the fact that there was a larger world outside his door—for even he was not so absent-minded that if he had gone out to do his reflecting under the open sky he could have remained oblivious of rains and rising waters. Nor does the fact that his wife's world was so little explain, by itself, her unconsciousness of the flood. If her fancy had not journeyed into a far past, or to some romantic realm created by her disappointments, or to heaven, all the laundry work in the world would not have blinded her to what was happening. And so, singularly different as the cases of husband and wife were, they were yet the same: each was living at one and the same time a life too bounded and another life too infinite. I can not remember the end of their story. But it was certainly tragic. If, in some other world, that learned man and his wife get the chance to try

life again, they will surely endeavor to steer a happier course between the Scylla of the cosmic and the Charybdis of the domestic.

Unlike the learned man and his wife, humanity after the war is going to have a chance to try life once more right here on this earth. And if it is to profit by its experience it must bring to a swift end the divorce that now exists between its practical and its intellectual life, the most mischievous of all the absurd divisions of labor that have cursed and wrecked our present civilization. Never again must the thinking of the world be entrusted to men who are only thinkers. Never again must its drudgery be done by men who are only drudges. The world, in a word, must banish speculation from its garret and slavery from its kitchen. They are correlative evils. Henceforth labor must be illuminated by knowledge and thought vitalized by contact with practise. The attic thinker is an anachronism. He was the product of an abnormal economic and social relationship with his fellow men. Whether a member of a privileged class, or dedicated to poverty, or endowed by a monastery, or a patron, or a school, his was an existence of abnormal isolation and insulation from the details of the workaday world. The day of the metaphysician is done—the metaphysician in the sense of the man who, standing apart from life, seeks to see it in its entirety, or, like a spider, to spin out of his brain a self-consistent explanation of its mystery. But the day of the philosopher is only dawning—the man who descends into life, seeking contact with its variety, experience from its manifoldness, trying it at all its critical points, in the hope and faith that out of its diversities and discords a harmony may be created. For this type of man the world after the war is going to have literally a terrible need.

Yet what a task lies before him!

Look out on contemporary life, and even apart from the tumult of the war, what a chaos it presents! What does it all mean? Whither is it driving? To what wonderful thing is it blindly striving to give birth? Out of a thousand tendencies and interests, set down a score at random: syndicalism and psychical research, prison reform and proportional representation, Freudian psychology and free trade, scientific management and academic freedom, Gary schools and guild socialism, kultur and theosophy, the kindergarten and the single tax, anarchism and the gold standard, baseball and birth control. What a welter, apparently, of cross currents and counter purposes! Of any one of them, or a hundred others, there is no lack of men and women to speak authoritatively: to discourse on the evils of secret diplomacy or the necessity of sex education, on the inheritance of acquired characteristics or the spread of neurasthenia, on the future of Africa or the future of the aeroplane, on free verse,

or the League to Enforce Peace, or Christian Science, or conscription, or the negro question, or the revival of Greek, or osteopathy, or prohibition, or the servant problem, or the superman. But who is there to speak of all of them together: to grasp their secret interplay, to recognize their combined potentialities, to elicit their hidden harmonies, to perceive the design that their many-colored strands are weaving—or might be made to weave? No one, doubtless. The task is too gigantic for a single human brain. And yet there are men to whom it will stand as a perpetual challenge to intellectual combat, who will attack it again and yet again, and who will not be wholly defeated by it. Such men—whether they are thinkers who have descended into life or workers whose labor has been illumined by thought—are philosophers. Their problem, compared with that of the metaphysicians of the past, is as the conduct of a modern battle to a game of checkers. The world after the war will have need of the tactical victories of its farmers and mechanics, its miners and engineers. But as never before the world will cry out for the philosopher (though she will not call him by that name), for the philosopher is the strategist of the future.

SHAKESPEARE AND PHILOSOPHY

“THE real world is the world of Shakspeare and Plutarch.” That, declared William James, shortly before his death, is what philosophy “has ended by saying to *me* more and more.”

Far from having come to the same conclusion, there are plenty of people to-day, who, reacting against the idolatry of England's great dramatist that prevailed throughout the nineteenth century, are ready to prove that Shakespeare is obsolete. On the stage his plays may still afford a tolerable sort of entertainment, they admit. His verse may still charm the ear. But for serious purposes his world is out of date. One school of critics disposes of that world by declaring that it is the world of Feudalism. Another by showing that it is the world of Humanism. A third by insisting that it presents no clear-cut philosophy of life. Under any of these counts, or several others, the poet is found guilty. He is an aristocrat; our problem is the problem of democracy. He is an individualist; our task is the task of collectivism. He is interested merely in presenting life; what we need above all things is a philosophy to guide it. In the light of these statements, especially the last one, it is arresting to find one of the very profoundest of recent thinkers—a man of keen democratic sympathies and creative social vision, a man to whom philosophy was a passion—asserting that philosophy had ended by saying to him that “the real world is the world of Shaks-

pere.” Those words of William James may well give pause to any one who is preparing to inter William Shakespeare.

Now there needs no critic come from the grave of Shakespeare to tell us that the three centuries since his death have brought social, industrial, and economic changes of which not even the poet’s imagination could have dreamt. The face of the world is altered. Its immediate task is altered, too. The task of Shakespeare was to grasp and interpret the breakup of medievalism, to express creatively that great liberation and expansion of life that we call the Renaissance. Our task is to evoke a new unity out of that life. But it does not follow, because the appearance and work of the world are changed since Shakespeare’s time, that its heart and soul are different also. On the contrary, as William James divined, its deepest realities remain the same. Granted that Shakespeare can throw no immediate light on a hundred of our practical problems; it is still not too much to say that we shall succeed or fail in our work of framing a new international civilization, according as we do it, or fail to do it, in the Shakespearian spirit.

Civilization is constantly trying to see how much of life it can unify. It is easy to have a great deal of life if you leave out the unity; and it is easy to have a great deal of unity if you leave out the life; the thing that is hard is to have them both together. All the great unifications of the past have been achieved at the price of life’s variety. That of Rome was. That of the Catholic Church was. That of Prussia, if Prussia had succeeded in putting the world at her feet, would have been. But Prussia did not succeed, for the world is getting tired of achieving its freedom by the process of changing the name of its slavery. Power to bring order out of chaos is a god-like power; but the task of unifying the world will never be carried through triumphantly until to the passion for order is added the belief that life has not one end, but many ends; that every genuine experiment in human living is sacred—to be protected, encouraged, understood, and to be judged only by its hostility or helpfulness to the rest of life; that the only truth entitled to say to another truth, “I am truer than you,” is the truth that can include and take up that other truth into itself. This attitude may be better described as a spirit than as a belief. And to the secret of this spirit there is no better guide than Shakespeare.

It is this spirit that is variously called his myriad-mindedness, his universality, his objectivity, his impersonality, his tolerance, his “mercy”—and it is this too that is supposed to constitute his lack of philosophy! It is this spirit in his works that enables men, according to their predilections, to prove to their complete satisfaction that Shakespeare was a Catholic or a Protestant, a radical or a con-

servative, an aristocrat or a democrat, a materialist or an idealist, an atheist or a Christian—never perceiving that the poet was one of those who saw that life is altogether too subtle and complex to be caught within even the most skilful formulæ of human thinking. Upon this attitude Shakespeare of course had no monopoly. In varying measure, it is the spirit of all poetry. It is the creative spirit. It is the spirit that desires life, and desires it more abundantly. It is the spirit that says "Judge not." Only superficial minds think that to say "judge not" is to say "let there be no judgment." Shakespeare could pass from pole to pole—from "Timon" to "The Tempest," and from "A Midsummer-Night's Dream" to "King Lear." Yet of no poet who ever wrote are we more certain what he loved and what he hated. The distinction is that where the doctrinaire spirit, the fanatic spirit, the party spirit, or the ordinary prejudiced human spirit, justifies this kind of life and condemns that, the creative spirit leaves life free to justify or condemn itself. They who aspire to shape a world-state must learn the secret of doing exactly that. The military spirit, the legal spirit, the imperialistic spirit, the institutional religious spirit—these may impose themselves on life and succeed in welding vast masses of humanity into this or that marvellous machine. But it is only the creative spirit that can elicit from life those cohesive and harmonizing forces with power to preserve its variety and touch it at the same time into a living organism. This is the real pacifism. Upon it the reconciliation of socialism and liberty, of internationalism and democracy, depends.

Shakespeare's very lack of philosophy, then, turns out to be a philosophy—a philosophy, moreover, that has striking resemblances to certain developments of modern thought. For Shakespeare the human world is what individual men make it; they make it many different and contradictory things at the same time; those things must be judged by the joys or the wounds that they produce; and any unity or promise of unity in that world seems, not like the nice adjustment to one another of the parts of a machine, but like the harmony in variety of the flowers in a garden or the instruments in an orchestra. Now no one even slightly acquainted with recent philosophy needs to be told that these are precisely the conclusions arrived at by the author of *The Will to Believe*, *Pragmatism*, and *A Pluralistic Universe*, and they serve to explain what William James meant by declaring that philosophy had ended by saying to him: "The real world is the world of Shakespeare and Plutarch, in which men live out their several businesses." Nor it is a coincidence, I think, that this pluralistic, creative philosophy of James, Dewey, and others has come out of America—America that is seeking to solve not

merely its original democratic problem, but to find a harmonious working basis for a score of nationalities and cultures. And now the war makes us realize, if we did not realize it before, that on a vaster scale the American problem is the world problem. Orient and Occident, Slav and Teuton, black and white, all races and religions, all colors and customs, must be—not fused in a melting-pot—but composed into a symphony. Surely for such a task the world must seek counsel from its supreme composers. And one of these, as the author of *A Pluralistic Universe* reminds us, is William Shakespeare.

If Shakespeare has this significance for the twentieth century, it is proper to ask whether he is being taught so as to bring it out. If we were to judge from college catalogues and the publications of scholars and teachers, we should be led to infer that the burning Shakespearian questions may be divided into three classes: (1) the poet's linguistic usages and the state of his text; (2) his sources and his relation to contemporary dramatists; (3) his technique as a playwright and the allied question of the construction of the Elizabethan stage. These problems have their place. But in the name of sanity is it not time to have done with the teaching of Shakespeare as if every student were to become a Shakespearian specialist? We have spent some decades in trying to determine what Shakespeare meant to Shakespeare's contemporaries. Is it not about time to begin finding out what Shakespeare means to us? For the two things, necessarily, are profoundly different. Every age, said Goethe, must seek its own interpretation of *Hamlet*. The same is true of all of Shakespeare's masterpieces—as it is, indeed, of all great works of art. The manglings that Shakespeare's plays underwent during the Restoration and later, like Tate's version of *Lear*, were really less sacrilegious than the attitude of many present-day scholars. The eighteenth-century "adapter" at least treated Shakespeare as if he were alive and honestly tried to express him in the eighteenth-century spirit. The twentieth-century "scholar" would pickle him forever in a jar of Elizabethan spirit. A school-boy would know better. Indeed, the school-boy who blunderingly takes a sixteenth-century word in its modern significance and admires the line for saying something it never intended to say is really closer to the spirit of poetry and the heart of Shakespeare than is the professor who knows the whole history of the word and gets its precise Elizabethan shading, but who, in his hurry to get on to the next word, hasn't time, if he has the power, to admire anything except his own learning. Such pedantry is at the opposite pole from poetry.

The demand of the hour in this matter is for a social and pragmatic school of Shakespearian critics and teachers who can hear and

report what Shakespeare has to say to the present generation. For that task a first requisite will be an understanding of the relationship of politics, philosophy, and poetry. "There is more of a nation's politics to be gotten out of its poetry," says Woodrow Wilson, "than out of all its systematic writers upon public affairs and constitutions." The function of the philosopher, says William James, is "indistinguishable from that of the best kind of statesman at the present day." Taken together, those two sentences make clear a truth to which our abject slavery to words has long blinded us: that politics, philosophy, and poetry are not separate things, but three forms, rather, of the same quest, three modes of the same activity. Each, in its purity, is a manifestation of the creative spirit. In a liberal society, each will draw nourishment from the other two. Command of these three P's, indeed, is as indispensable for creative leadership in the affairs of civilization as command of the three R's is for the business of everyday life.

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A LIST OF ARTICLES, MOSTLY BOOK REVIEWS, CONTRIBUTED BY CHARLES S. PEIRCE TO "THE NATION" TO WHICH IS APPENDED SOME ADDITIONS TO THE BIBLIOGRAPHY OF HIS PUBLISHED WRITINGS IN THIS JOURNAL, DECEMBER 21, 1916

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REVIEWS AND ABSTRACTS OF LITERATURE

A Study in the Philosophy of Bergson. GUSTAVUS WATTS CUNNINGHAM. New York: Longmans Green and Company. 1916. Pp. ix + 212.

Professor Cunningham's voice, as it sounds through the pages of *A Study in the Philosophy of Bergson*, is the voice of the Genteel Tradition in American philosophy. Suave in tone, lucid, grave, eloquent, accomplished, it laments the upgrowth of a generation of unscholarly thinkers; quotes Tennyson and T. H. Green; urges German philosophy on us before everything else; finds fault with James; takes Bergson to task and then sets him right, firmly, not unkindly, as a schoolmaster might some brilliant, but youthful and wayward, disciple. In the course of the book certain problems spring up; such problems as are likely to rise and to tower and ramify above a discussion of any particular point in philosophy whatsoever; nature of knowledge; appearance and reality; *etc.*, *etc.* Professor Cunningham touches on these problems interestingly and significantly. But the center of gravity of his book is outside of any topical problem from the history of philosophy. Primarily he attempts, in his book, to draw certain inferences of constructive intent from the contradiction into which he discovers that the philosophy of Bergson has fallen. Competent critics are agreed that the philosophy of Bergson is stricken, and seriously stricken, with contradiction; but the constructions which they try to put on this contradiction are very diverse. Professor Cunningham's argument in the matter runs as follows:

Like Kant, through whom it is well that Bergson be approached

and apprehended, Bergson declares that the intellect is incapable of acquainting our minds with reality. Intellect is restricted to spatial, quasi-spatial, or mechanical categories; reality, on the other hand, is, or at least it may be, non-mechanical. So Kant; so Bergson. Into this situation, or supposed situation, Bergson invokes a new faculty, intuition, to eke out the inadequate intellect. Intuition, in his sense, employs non-spatial, non-mechanical categories. Bergson's originality, then (if original he be), will stand or will fall with this intuition. But the doctrine of Hegel demonstrates clearly that Kant was mistaken in restricting the intellect to mechanical categories. Bergson's contradiction is a problem of Hegel *versus* Kant. Truth lay on Hegel's side. In fact, the later of the Critiques of Kant show Kant forced from his earlier position. Similarly, as Bergson proceeds he is forced to allot to the intellect powers he had assigned, in the first place, to intuition alone. Discrepancy in Bergson's accounts of the nature of the intellect, which he sometimes sets over against intuition, and sometimes identifies with intuition itself, is the source of the disconcerting contradictions and confusions that permeate and weaken this philosopher's work.

Such is the nerve of Professor Cunningham's argument, as far as his diagnosis of Bergson's contradiction is concerned. Beyond this diagnosis, and on it in part, he builds up a doctrine of "Creative Finalism," to replace the "Creative Evolution" of Bergson.

The doctrine of Creative Evolution, Professor Cunningham says, is unintelligible and irrational. It is self-contradictory. Bergson's duration is no process, as lacking all homogeneity. If the evolution of the self were heterogeneous purely, as Bergson contends, both psychology and ethics would be inexplicable; nor could any sense of security be enjoyed by philosophers, since nothing would certify the direction that conscious experience might take. According to the hypothesis of Creative Finalism, however, conscious experience is teleological throughout. Certainly the temporal process is genuine. To be real is to change, to change in accordance with ends which themselves change. Reality creates—actually, spontaneously. Nothing static is real. But, of course, there is law in the midst of this transformation; law guaranteeing the future. Reality expresses a determinate principle; reality, throughout evolution, is ever identical with itself. The only past that possesses existence is precisely the past that now exists. That which is, is that which is to be. Being and becoming are one and the same. "Reality is a flux and yet it is static."

With Professor Cunningham's diagnosis of Bergson's contradiction the reviewer finds himself partly in accord. Bergson unques-

tionably alters his definitions of intuition and of intellect, with the result that they sometimes exclude one another, and sometimes overlap in a greater or less degree. Sometimes intellect, in Bergson's account, may employ the mechanical categories only; sometimes it may employ not only mechanical, but other categories as well. The difficulty, however, is that occasionally Bergson forbids the employment of any categories whatever to intellect; or, it might be better to say, to the mind of the philosopher *quâ* philosopher. This general condemnation of conceptual knowledge Professor Cunningham notes, but regards as too skeptical and absurd to be taken very seriously into account. Its absurdity the reviewer would shrink from denying; nevertheless, contradiction is essentially absurd, and the cardinal problem of Bergson's philosophy, from the point of view that Professor Cunningham chooses to adopt, is: what can it be that drives a philosopher of Bergson's calibre into the absurdity of contradicting himself? Is it a fact that Bergson sets out on the course of his philosophizing with a theory of the intellect which, in the sequel, he tends to reject? Professor Cunningham would have it that the contradiction in Bergson's philosophy is one in process of being outlived—a fortuitous or adventitious affair, which might be eliminated from Bergson's doctrine, leaving that philosopher's theory of knowledge, not very much altered, in the form of a respectable epistemology. On the other hand, we seem to discern a contradiction continually generalized as Bergson writes on; a contradiction most striking and significant in the *Introduction to Metaphysics*, *La Perception du Changement*, and *L'Intuition Philosophique*. It would be possible, moreover, to grant that Bergson's difficulties are, in the final analysis, identical with Kant's, without following Professor Cunningham in his view that Kant's fundamental difficulty resulted from his restriction of the intellect to a particular class of categories. Bergson strikes us as contradicting himself most seriously (and instructively) in the latest of his publications, where he struggles with the general question more explicitly than elsewhere; how can a category—any category—be the instrument of knowledge, seeing that a category appears of necessity to define, restrict, and therefore to vitiate, the vision it conveys of an object? This problem, which comes to be ever more prominent in Bergson's thought, we suppose to have been Kant's fundamental preoccupation in the theory of knowledge, and logically, therefore, the point of contact between Bergson and Kant, rather than any consideration of mechanical or non-mechanical categories.

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NEW YORK CITY.

JOURNALS AND NEW BOOKS

MIND. January, 1918. *Analysis of Thinking* (pp. 1-21): W. E. JOHNSON. - Whereas it is commonly assumed that logic and psychology give entirely different treatments of the topic of thinking, the view is here put forward that preliminary treatment of thinking should be precisely the same both as regards substance and detail in both of these studies. The writer then proceeds with such an analysis. *Individuality* (pp. 22-39): CHAS. A. MERCIER. - Defining an individual as "that which is comtemplatible separately from other things, and as unified in its composition," there follows a classification of individuals according to internal constitution into "class" and "whole," and according to external constitution into "substance" and "quality." An analysis of each of these divisions is then given. *Volitional Attention and its Training* (pp. 40-54): C. W. VALENTINE. - Believing in the reality of voluntary attention as a psychological fact, the paper shows that there is a certain amount of truth in the doctrine that a general training of attention is possible, and shows how exactly it may take place. *The Relation between Art and Science* (pp. 56-76): P. J. HUGHESDON. - The view is that "art and science provide complementary and correspondent conceptions of reality." The art-correlation with science is shown with regard to the postulates of science, logic and mathematics, ethics and religion. *A Discussion of Modal Propositions and Propositions of Practise* (pp. 77-85): RAPHAEL DEMOS. - An interpretation of modal propositions and propositions of practise as referring "to no other field than that of the factual world." The latter are interpreted with special reference to the opposing views of Dewey. *Cassandra's Apologia* (pp. 86-91): F. C. S. SHILLER. - A piece of dialectic in the form of a dialogue between Cassandra and Apollo or the nature of truth and falsity. *Discussion: "Activity": A Vital Problem*: E. D. FAWCETT. *Critical Notes*: C. A. Mercier, *On Causation and Belief*, E. E. C. JONES. I. HUSIK, *A History of Medieval Philosophy*, C. C. J. W. M. W. Keatinge, *Studies in Education*, T. P. NUNN. *New Books. Philosophical Periodicals. Notes.*

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NOTES AND NEWS

HERMAN COHEN

THE German newspapers report the death of Herman Cohen, formerly professor of philosophy at Marburg, and head of the Neo-Kantian school of philosophy that is known as the Marburg school.

Born in 1842, Cohen first attracted the attention of the philosophic public by a series of articles in the *Zeitschrift für Völkerpsychologie*, 1866-1871. The last of these articles, *Zur Controverse zwischen Trendelenburg und Kuno Fischer*, displayed a strikingly thorough and vigorous grasp of the Kantian philosophy as a method of interpreting experience. This was followed by his book on *Kants Theorie der Erfahrung* (1871) in which the Kantian philosophy was not only vigorously defended but also placed in a new historical light. Instead of correlating it with the British empiricism (Locke-Hume) or Wolffian rationalism, Cohen tried to show that the Kantian philosophy is best understood as concerned with the basis of mathematics and physics as developed by Kepler, Galileo and Newton. He followed this up with *Platons Ideenlehre und die Mathematik* (1878) and *Das Prinzip der Infinitesimalmethode und seine Geschichte, ein Kapitel zur Grundlegung der Erkenntniskritik* (1883). The historical learning of the latter book has been admired by men like Bertrand Russell, who differ radically from its philosophic position. Cohen also dealt with the two other portions of the Kantian philosophy, ethics and esthetics, in *Kants Begründung der Ethik* (1877) and *Kants Begründung der Ästhetik* (1889). In the latter part of his life, Cohen stated his own independent yet closely Kantian views in his *System der Philosophie* (I., *Logik der Reinen Erkenntnis*; II., *Ethik des Reinen Willens*; and III., *Ästhetik des Reinen Gefühls*, 2v.). Cohen also edited Lange's *Geschichte des Materialismus*, and his introduction and supplements to that book contain clear indications of his attitude to modern scientific and philosophic movements.

Cohen's influence was very extensive. His conception of the history of modern science is shown in Kurd Lasswitz's *Geschichte der Atomistik*, and in Cassirer's history, *Das Erkenntnisproblem, etc.* (1906-1907). His ethical views have largely shaped the juristic philosophy of Stammler and have been applied to the philosophy of history by Münch and Gorland. The volume of *Philosophische Abhandlungen* presented to Cohen on his seventieth birthday (1912) testifies to the wide extent of his philosophic influence—the contributors including men of many nationalities and of divers interests. Many of the younger socialists of Germany have tried to substitute his form of Neo-Kantianism for the Marxian Hegelianism which has been the prevailing basis of official socialism.

Besides his many contributions to philosophy Herman Cohen frequently wrote on questions of Jewish religion and ethics. He was one of the founders of the *Gesellschaft zur Forderung der Wissenschaft des Judenthums*, and his seventieth birthday was made the occasion of presenting him with a *Festschrift* of Hebrew studies entitled *Judaica*.

M. R. COHEN.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

HISTORY, PSYCHOLOGY AND CULTURE: A SET OF CATEGORIES FOR AN INTRODUCTION TO SOCIAL SCIENCE

PART II

VII

Deterministic-Historical Category.—The facts of this group have led to a great deal of discussion, controversy and philosophical speculation. It is the writer's opinion that they also have been the most misunderstood. On the one hand we have evolutionary formulations, such as Spencer's, based on an implicit faith in rigid historical determinism, which in Spencer's presentation takes the form of quasi-organic principles of cultural development, forever and everywhere the same. While the cast-iron system of the philosopher of evolution has been often and rudely shaken in many of its specific allegations, as well as in its fundamental postulates, the faith in historic uniformities persists, and with it the tendency to formulate historic laws. Breysig's attempt is particularly interesting in this connection, for, whereas it is even weaker in its specific formulations than was perhaps inevitable, it well represents the fairly common tendency. In all such systems the discrepancies in the historical processes compared are never rated as theoretically on a par with the uniformities, nor as of equal significance. The discrepancies are either overlooked, thus involving a serious misrepresentation of the facts, or they are regarded as somehow less real or less deep than the uniformities, or they are brushed aside as "disturbing agencies." That in the last assertion there lies, in a very qualified sense, a measure of truth, will, I think, appear from what follows. On the other hand, the theoretical and methodological problems involved have been attacked critically by a number of historians and philosophers,

some of whom, at least, have reached the conclusion that a radical difference exists between the natural and the historical sciences, that, whereas the former are amenable to conceptualization in the form of "laws," the latter do not permit of any such process, the historical series of events being too complex, the events themselves too discrete, too individual for subsummation into sweeping generalizations. Some thinkers, while admitting the "uniqueness" of historic events, claim that whereas the concept of "law" is not applicable to history, a partial conceptualization of the successive series is nevertheless attainable, under the heading of "principles" of more or less wide application.

It seems to the writer that an analytical separation for heuristic purposes of the deterministic from the accidental factors in history, tends to throw a great deal of light on the proper sphere of each, as well as on their interrelations. Meanwhile we must keep in mind that the concept "determinism," as here understood, will always be relative to the concept of "a system" of preferential relations.

An examination of the deterministic series reveals the presence of a number of factors which fall into several groups, such as: logical, mechanical, psychological, socio-psychological, and still another group of factors not readily definable by a term, which are comprised in the concept of "limitation of possibilities."

The logical determinism can be exemplified by the history of mathematics. The discovery of analytical geometry by Descartes made possible a practically endless series of further discoveries and applications (which, essentially, are also discoveries), including the differential calculus. When that discovery was made by Newton and Leibnitz, mathematics came into possession of a tool so powerful and far-reaching, that even to-day no accurate estimate can be made of the limits of its usefulness. This stands for a staggering array of new mathematical discoveries. Again, Lobachevsky's penetrating reexamination of the postulates of the Euclidian geometry led to the concept of the possibility and to the concrete realization of alternative systems. The effect on the world of mathematical thought was cataclysmic; the mighty pillars of absolutism, heretofore the secure foundations of the edifice of science, suddenly gave way. Mathematics, and with it the theoretical branches of the exact sciences, turned their backs on absolutism and embraced the Theory of Relativity.

Mechanical determinism is observable in the realm of invention, in the narrowest sense. As progress from primitive to modern conditions is in no other domain so conspicuous and indispensable as it is in technical, mechanical achievement, the application of the deter-

ministic category in this context becomes of special importance. In a most general formulation determinism here expresses itself in the fact that, pending a particular invention, or one of a class, further progress, further inventions in a given field become impossible; then, when the required invention is made, a new domain for further progress is opened, sometimes a domain of great vastness; and numerous further inventions presently follow. The last fact, however, belongs to another set of factors; the mechanical, which in another aspect is also a conceptual determinism, merely comprises the opening of new possibilities; an invention is made, this prepares the way for another, or one of a set, and, granted that invention in the field continues, that is, that one or a number of ingenious minds apply themselves to the problem, the further invention, or one of a set, which is now made possible, will actually be made. A good illustration is provided by the aeroplane. Not so long ago the ultimate solution of the problem of aerial flight in heavier-than-air machines was gradually passing into the realm of unrealizable dreams. Men like Jules Verne and Wells saw visions of future bird-men, but those technically competent were growing skeptical as to the possibility of ever finding a motor light enough yet powerful enough to drive through space such an aerial mechanism. When the feat was achieved, the Wrights having made flying in heavier-than-air machines a reality, a new vista was opened for future mechanical achievements; and one by one, slowly at first, then with amazing rapidity, they were realized. The rapidity falls outside the deterministic chain, being due to the intrusion into the aeroplane invention series of an accidental factor, the war; the fact of interest in connection with determinism being the opening of the doors for further inventions by the achievement of one. The history of the printing press, of the hydraulic hammer and press, of the reciprocating and later of the turbine engine, of the telephone, telescope, wireless, of the submarine, finally, abounds in situations of just that sort.

The domain of socio-psychological principles embraces a vast array of facts of the deterministic-historical category. Take the facts of standardization. Cultural features representing a certain aspect of culture, such as religion, art, ethics, tend to develop one or more standards or patterns and to conform to the same. In the absence of disturbing, complicating, or opposing tendencies, these patterns prevail over possible rivals to such an extent as to constitute practically fixed or crystallized forms. The success of these tendencies is roughly proportionate to the simplicity and isolation of a culture. Another socio-psychological principle of this type is

what one might call the formalization of cultural features, the losing of the emotional or intellectual content on the part of a rite or an institution, so that only the shell, the form, the behavior remains. This is the domain of what is currently known as survivals. Familiar examples are marriage by capture, which from a grim reality becomes a mere puzzling symbol, or magical rites which evolve into children's games, or prayers which are not even suggested by a set of nonsense words, or that endless host of religious beliefs, practises, experiences, which become but mere shadows of their former selves when fed only on Marett's "evaporated emotions." In a wider sense, every culture teems with survivals; for the decay of the psychic content of institutions is an ever-present and constant process. It is compensated for by another socio-psychological principle of the deterministic-successive category, namely, the never ceasing appearance of new contents, new values, new functions. This is perhaps best exemplified by the fluctuations of functions of social units. A clan originally controlling exogamy becomes a religio-ceremonial unit, possibly but not necessarily at the loss of its function as a regulator of marriage; a guild organized for technological reasons, grows into an economic, social, political factor; a social body called into being for the dispensation of charity develops into a mighty political machine, still charitable, but to whom? An institution created for the promotion of learning becomes an athletic club or a military organization, *etc.*, *etc.* The principle of division of labor also belongs here. Take a group of individuals with certain tasks to perform, and sooner or later specialization, often accompanied by a multiplication of tasks, and division of labor will set in. This will obtain whether the group is primitive or modern, natural or artificial. Another less obvious instance is synchretism. As usually employed the term refers to the tendency of a deity in the ascendancy to absorb the qualities and functions of other deities whom it gradually supersedes. But in a wider sense, this tendency is observable wherever there is development in the direction of centralization with accompanying shifting of functions, whether it be a machine which, after a prolonged process of progressive complication through the addition of separate parts for new functions, becomes simplified so that a few well-coordinated mechanical contrivances perform the same task equally well or better (of course, no socio-psychological element is involved here); or a business concern or factory, where, after consultation with a scientific management expert, the agents and functions are reappointed in such a way, that one or a few centrally located individuals,—in a functional, not necessarily spacial sense,—assume functions of coordination

and regulation referring to the mutual relations of the functional units, while the special tasks fall to the separate units; it is, finally, so with the State, when numerous powers and functions are assumed by the central administration, until only functions of purely local and individual concern are left to the constituent minor social units and the individuals comprising them.

Two further principles must be mentioned here, one of which might be designated as the principle of the natural limits of development, the other as the principle of the pendulum, or of rhythm, or of reaction. The two principles are correlated. Development in a certain direction will often continue, according to the principle of inertia⁶ or the line of least resistance, until a physical limit is reached, or a psychological limit, which makes the situation absurd or self-defeating; then reaction sets in, "opposite" developments come into favor, the pendulum swings back, perhaps only to return with a similar exaggerated sweep. This rhythmic pulsation of development is a familiar aspect of the historic process and has often been commented upon. An ornamental art becomes ornate; the possibilities of at all acceptable decorative excesses having become exhausted, a reaction sets in in favor of simple lines and inobtrusive patterns. It is interesting to note that the historic Moslem, and Rococo, and even late Gothic, have their counterparts in the primitive arts of New Guinea and New Zealand. The approximate limits of ornateness having been reached, these primitive techniques might be expected to generate tendencies in compensating directions, if indeed they developed at all. Similarly, the reputations of philosophers, scientists, musicians, at first monstrously inflated, are presently permitted to pass into oblivion, sometimes only to reawaken for another equally brilliant career. The doctrine of evolution, after a seemingly successful attempt to engulf all natural scientific thinking, grows top-heavy with its many tasks, finally becoming itself submerged in an atmosphere of critical caution which savors of skepticism; Romanticism engenders Realism, and *vice versa*; a Hegel has his Marx, and in a different discipline and level, a Münsterberg his C. A. Strong; political centralization carried to excess provokes a cataclysmic revolution in favor of the autonomy of the constituent social units or of the self-assertion of individuals; the

⁶ The principle of inertia, in one of its aspects, is itself a most significant illustration of psychological determinism: present acts and attitudes are, *ceteris paribus*, determined by past acts and attitudes, in so far as their very occurrence establishes a bias in favor of their repetition or retention. So far we are in the domain of individual psychology. Cultural inertia, the essential stabilizer of the cultural content but the arch-enemy of progress, comprises, of course, more than the mere psychological inertia of the individual, but that plus the cumulative inertia of institutionalism.

chaos or friction born of multiple autonomous units fosters anew leanings toward centralization, which may again be realized only to be once more defeated.

There remains one further important principle belonging to the deterministic-historical category, the principle of the limitation of possibilities in developments.

Sherlock Holmes once said with reference to the detection of crime: having excluded the impossible, accept the alternative, no matter how improbable. This shrewd remark has wide bearings on the interpretation of historic phenomena. To say that there is only one possibility of development, is to say that the event is categorically determined. Such is the nature of the cosmic determinism which underlies our naturalistic philosophy. With reference to the phenomena of interest in human history, determinism, as was shown before, is never categorical, but relative; one of the aspects of such determinism is expressed in the principle of limited possibilities. Even in the domain of the history of mathematics, the most rigorously deterministic of the successive series, there exist multiple possibilities of development. Thus, the differential calculus can be derived from the theory of limits as well as from that of infinitesimals, and the series of successive stages, inventions, in the two cases is different. In the line of mechanical invention—granted, however, that the problem is clearly defined—the number of possible solutions is usually strictly limited. The known mechanical principles constitute one drastic limitation; another, or set of others, is contributed by the preexisting properties of the machine which is to be improved by the new invention—if such be the nature of the task; in actual experience, the financial limitations are also of the greatest importance. This, however, brings in a factor, which, intrinsically, of course, has nothing to do with the limitations of mechanical series; therefore, when under war conditions the financial restrictions are practically eliminated, a tremendous precipitation of inventions is the result. In the domain of material things, the objective or technical limitations imposed upon the solutions of problems of use are often stringent. There are not many ways in which a handle of a sword, or a paddle, or a knife can be made, and remain fit for use; therefore, all of the possible ways have been actualized among different tribes and each has probably been arrived at more than once. The same is true of the basic shape of ladles and dishes, of boats and canoes, of bows and shields, and even of such things as percussion instruments and fire-making apparatus. In social organization, given human nature, the possibilities of a natural grouping, such as is to be expected in a primitive community, seem limited indeed. Every group of people, limited in size by the natural balance of

birth and death, must live somewhere. No matter how fleeting, how little organized such residence may be in a truly primitive group—experience shows, however, that strictly migratory peoples, like the gypsies, are foreign to the primitive world—certain associations, habits, memories are formed which identify the group with the locality, from which the name of the group is so often derived. Then again, the biological conditions of sex determine the nucleus of a family, which through associations, affection, the desire for protection, the necessity of preserving the offspring, *etc.*, also acquires accretions enough to constitute a fairly intimate socio-psychological unit. Finally, the local as well as the biological factors become extended through subjective attitude, so that a group regards itself associated with, belonging to, a locality which it does not *de facto* occupy, but from which it may derive its name or trace its origin; similarly, the actual blood bond of the family is extended into the fictitious relationship of a pseudo-biological unit, the clan or the gens. Such seem to be the limitations of the possible primitive groupings; all of them have been realized, the groupings on a natural basis; territorial or biological, in all cases, the groupings on a subjective basis, local or pseudo-biological, in a very large number of tribes. In religion, an interesting illustration is provided by the phenomenon of animism. Here the possibilities actually seem to be limited to one: if another world besides the material arises at all, it will be an animistic world, one fashioned after the material, but combining with it those qualities of dynamism and evasiveness necessary to account for certain of man's experiences in the objective and subjective worlds, which are reflected in his psyche as animism. Thus animism may be regarded as psychologically (or socio-psychologically) over-determined: it may be arrived at in different ways, through different specific stages of psychic elaboration, but come it must. In the more specifically intellectual range, an instance is presented by cosmogonic theories. If people think of the past of the Universe constructively at all, they may think of it as perpetually the same; as made out of nothing, or out of a preexisting state as an idea; finally, as being in a condition of flux, change, development, from its inception to the present moment. These are the plausible limits of cosmogonic speculation, and all of the possibilities enumerated above have been realized, among primitive as well as among civilized peoples.

The determinisms referred to above require some further comments. In the first place, let us repeat that these determinisms are in no sense absolute, but relative, referring as they do to certain more or less definitely fixed steps or events in a series which, from the conceptual standpoint, constitutes a system of preferential relations.

Then, again, the spring of action is not supplied in these determinisms, except in some instances of the socio-psychological group of principles. In other words, the determinisms do not, in themselves, constitute a guarantee that anything further will happen. Therefore, our generalizations in connection with this entire series of phenomena must take this form: if anything further happens—in the conceptual, mechanical, psychological line involved—it will be one of a more or less restricted set of events, inventions, ideas, or it will fall within the limits of a certain range of possibilities. A still more important consideration remains: the determinisms enumerated under the various headings constitute a comparable group of concepts only in their relation to the totality of culture or of the historic process, but within their own particular domains of phenomena the determinisms are not at all comparable and, if investigated, would have to be analyzed from vastly different standpoints and by different methods. Thus, the series of conceptual steps in the mathematical domain are part of culture, of history, in so far as they find their concrete embodiment in the history of mathematics, which is made by many men, at different times and places, and is most intimately interwoven with the progress of the exact sciences, of logic, of engineering, *etc.* The same is true of any series of mechanical inventions. More emphatically this is true of the institutional phenomena discussed under the heading of the limitation of possibilities, and, of course, of those other phenomena conceptualized under the heading of socio-psychological principles. But the determinisms involved are, firstly, none of them cultural or historical, but conceptual (or logical), mechanical, psychological, socio-psychological; and secondly, the determinisms themselves are quite different in character. Thus the steps in the mathematical series are fixed by the necessities of purely abstract and formal relations in thought. The steps of the mechanical series are only in part conceptually determined, to the extent, namely, to which the development of the theoretical principles of mechanics is involved—to that extent there is high comparability with the mathematical series. But in many of its phases the mechanical series is mechanically conditioned: there is a standstill in the development of inventions in connection with a certain problem, not because further steps are conceptually impossible, but because of the non-arising of a set of secondary problems until a certain principle is introduced, a certain invention made; then, as soon as that is achieved, new tasks and problems are revealed by the very application of the new invention; these are in turn attacked and solved, and so on. In connection with the various phenomena to which the concept of the limitation of possibilities is applicable, determinism simply means that at any given stage in the series the range of possible events is limited. Noth-

ing is implied with reference to the linkage of events in the series which is actually realized; all that determinism means here is that the indefiniteness, the adventitious character of the series decreases with the limitation of possibilities of development at any given point; the narrower the range of possible events the more rigid the determinism. Some of the principles of the socio-psychological set, finally, are of such a character as to justify the concept of "tendency" in place of "principle." Such are, for instance, the principle of division of labor and that of reaction or development to the natural limit, where, if only certain conditions are satisfied, not only the character of the event but its very occurrence seem to fall into the deterministic series.

VIII

Deterministic-Contemporaneous Category.—The relations between the different aspects of a culture are patently not strictly deterministic. That is, when one or more aspects of a culture are of a certain form and degree of development we may not expect one or more other aspects of it to be of a certain definite form and degree of development. Therefore, attempts to represent one aspect of a culture as a corollary in quality or advancement, or as a function of another, have always failed. Nevertheless, the element of determinism in our restricted sense, can evidently not be excluded from a consideration of the coexistential series. There is a limit to the possible and probable discrepancies between the different aspects of a culture. It is true that with reference to the relation of material culture and social organization, for instance, the Eskimo present an instance where a high material culture coexists with a most simple and amorphous social system, while in Australia an elaborate, in fact, intricate social organization is accompanied by arts and crafts on a distinctly primitive level. On the other hand, political aggregates of a certain measure of integration and orderliness, states, can not exist without certain advances in material culture, such as road-building and the erection of solid and more or less permanent habitations. This is exemplified not only in modern civilizations, but also in Africa in the states of the native Negroes. Similarly, the erection of modern buildings and bridges, quite apart from the technical knowledge involved, is unthinkable in a community without considerable social complexity and political integration. While these illustrations are obvious because extreme, less evident but relevant examples could readily be adduced. The social and political organization of Africa, for instance, could be roughly foreseen from the fact that a number of industries are there found equally flourishing within relatively restricted districts and among the same people. Again, in the

domains of religion and morality, a humanitarian ethics, having as one of its postulates the brotherhood of man, is incompatible with a religion which calls for human sacrifices; an undifferentiated animism is never associated with a stern individualistic ethics; a powerful monotheistic divinity invariably becomes the source of categorical sanctions of moral behavior. Similarly, in the relation of art and knowledge: realistic art, always dependent on careful observation, can not progress very far without a fairly accurate knowledge of anatomy, if animals or man are the subject; nor can other forms of art thrive or even exist without some familiarity with the principles of perspective, which again can not be dissociated from facts belonging to other branches of physics and geometry; painting and architecture, on a high level, are inconceivable without the technical knowledge which provides them with their tools and foundations. Again, when social organization and knowledge are involved, however different may be the sources, historical and psychological, from which they spring, however unlike the means of change in the two and the methods and occasions of their diffusion from tribe to tribe, definite, indeed necessary, correlations are present here also. Only crude knowledge is possible as long as social conditions are such that most adults of either sex are concerned, more or less directly, with the acquisition, elaboration and protection of the means of physical existence and of psychic balance. Not until a considerable advance has been made in the division of labor, not until specialization has brought with it relative expertness, and increasing complexity of life a slackening in the rigid enslavement of the individual, do we expect to find that degree of personal detachment, of deliberate observation, of persistent application of critical judgment, without which the systematization and conceptualization of knowledge are impossible. On the other hand, in the absence of definite knowledge of nature and of man, in their static as well as their dynamic aspects, social organization must of necessity remain unconscious in its foundations, and purely traditional or again wholly adventitious and haphazard in its customary and prescriptive as well as proscriptive aspects. With the accumulation of such knowledge, in particular with the development of methods for the study of society in its organic and more specifically social aspects, constructive legislation based on such knowledge becomes possible, and so do less clearly defined customary rules of behavior, which reflect a deeper insight into the nature of things and creatures, including man himself. Clearly, then, a certain limited determinism exists between the two sets of facts, in their coexistential aspect, which, *e. g.*, makes it possible to foresee the social organization of a group, or at least some aspects of it, when the state of knowledge in the group is known, and *vice versa*. Another

set of deterministic elements in the coexistential category falls into the realm of socio-psychological principles. These elements are well known and have been much discussed, but their relation to the totality of culture, in particular to the more strictly historical aspects of it, continue to be often misunderstood and misrepresented. These principles refer to the tendencies which spring from the coexistence and coordinated functioning, in varied situations, of individuals in different degrees of socialization. Illustrative of such principles is, for instance, the universal emergence at all times and in all societies of leaders, strong men, dominant personalities, with reference to whom the remainder of a group appears as followers, inferiors, supporters, disciples. All the phenomena of group action, in the specific sense, also belong here, as well as that even more restricted cycle of facts usually embraced under the caption of crowd-psychology. The positive correlation between common functions exercised by a group or social unit and the feeling of solidarity, is another phenomenon falling into the deterministic-contemporaneous category. So is that vast domain of data referring to symbolism on its socio-psychological side, which in its most general form may be conceptualized as the tendency displayed by groups of solidarity in function or status to project their communal consciousness into some permanent symbol, static or dynamic, which henceforth stands for the solidarity of the group, perpetuates as well as enhances that solidarity and on occasion, as, for instance, in totemism, serves to differentiate the group from other groups of solidarity in function or status, which may thus appear as equivalent social units of a common organization or system.

IX

Accidental-Historical Category.—In dealing with the facts of this category we must once more remember our definition: "accidental" does not mean uncaused, nor wholly outside the connected chain of events which constitute our conceptual universe, but an accidental event or thing is one normally belonging to another system of preferential relations than that in which it makes its appearance in the particular instance: from the standpoint of the latter system the event or thing is accidental. It thus becomes clear that all phenomena pertaining to intertribal, international, inter-culture-area contact fall into the above category. From the standpoint of the North African natives the advent of Mohammedanism was an accident; so also was the Spanish introduction of the horse among the Indians of the Plains; the appearance of White Man's iron among the American Eskimo was an accident, as well as that of "fire water" among all primitive tribes, who were suddenly thrown open to the blessings

of civilization. The coming of maize to Africa was, from the standpoint of the civilizations of that continent, wholly adventitious, and so were the beginnings of the Athapascan patterned basketry among the Tlingit of southern Alaska. The contributions made by the peoples of Asia to the cultures of Europe were one and all historical accidents for Europe, no less than were for Japan the elements of Chinese civilization in earlier days, and those of European and American civilization within our own time. Again, "Mrs. Warren's Profession" was an accident in the New World just as the "cake-walk" was in the Old. In all of the above and innumerable similar instances the "accidental" events or things did not grow out of the preferential connections of events within the recipient systems—at most one might speak of a certain readiness or preparedness for the reception of such events or things⁷—but came from without, from other systems; not only were the time and place of emergence of these events or things adventitious, but their particular contents were chance accretions to the systems which received them.

While the accidental factors are particularly conspicuous when the interacting systems represent or belong to distinct tribal complexes, culture areas, nations or even continents, the applicability of the concept of a system of preferential relations and with it of that of accidental factors, is by no means restricted to such situations. There is, on the contrary, no breach of continuity between the application of the concepts of system and accident to the mutual relations of relatively large, integral, and historico-geographically disparate units, and the application of these concepts to the interrelations of smaller and less independent systems within the limits of such units. Thus the system of legal and religious relations in a culture, while not independent from one another, may nevertheless for long periods of time proceed along relatively disparate paths of development, until the ascension to the throne of a monarch of a particular religious denomination or bent, or an impending separation of Church and State, or some other situation of like sort, throws the two systems into violent opposition to one another, or unites them by bonds of unprecedented harmony. The events or things constituting these newly acquired relations as well as the incidents which have called them into being, must, from the point of view of the two systems, be regarded as accidental.

The last and equally important application of the concept of a system refers to the individual. The most significant relations of the individual to the culture of the group are here involved. While certain aspects of the relations of the individual to the group belong specifically to the psychological-contemporaneous and the determin-

⁷ Cf. § XII.

istic-contemporaneous categories, we are here confronted with the relations of the individual to the cultural content and to the historical series of events. Unquestionably, the specific content of the individual psyche is derived from the cultural *milieu*—where else, indeed, should it come from?—but to admit this is not to identify the individual with “his” culture, is not to represent him as a microcosm minutely reproducing the cultural macrocosm. For, in the first place, any particular individual is within reach of only a limited part of the culture of his group, as has been intimated before. This is the more true the greater the complexity of a culture; so that in modern civilization and in the more elaborate civilizations of the Ancient World the individual is truly representative only of a relatively slight fraction of the culture, is less intimately associated with a considerably larger domain of it, and remains practically outside of what may often be the major part of the culture of his group. It appears, then, that even within the limits of the standpoint just outlined the individual may not be naïvely regarded as “determined” by his culture, or as a replica of it, but that the particular participations into which he enters must, from the standpoint of the individual as a system, be regarded as in many ways adventitiously conditioned. So far, however, we have only considered the variability of the cultural content of the individual in so far as it reflects the ways in which culture comes to him. An examination of the individual as a selective agency brings out the same relation with much greater force. As is well known, the individual does not face the world of experience as a *tabula rasa* nor as a mere passive reflector. In the first place, there are the congenital capacities and limitations. Disregarding all other factors, these innate qualities alone exercise a marked influence not only on the range and degree of assimilation of the individual’s cultural content, as will be readily admitted, but on the very character of that content. Thus an objectively identical cultural material will result in a vastly different cultural content, on the psychological side, in the case of the relatively passive response of the average individual when compared to the constructive, creative reaction of the gifted one. Again, an individual of limited gifts for the plastic arts, music or mathematics, for instance, is not only cut off from adding to the cultural material presented to him in one of these fields, but is powerless to assimilate it and, in certain instances, even to accept it, except in the vaguest sense. Thus, a non-musical or but slightly musical person can not, in any significant sense, even hear certain elements in a symphony of a Mahler or of a Strauss, any more than a mathematically indifferent mind can grasp the full bearing or perceive the beauty of a theoretical formulation of a problem in celestial mechanics, no matter what the training of

the particular individual. Nor is this all. Even were the biological factor eliminated, what might be called the biographical factor would remain. *Ceteris paribus*, the reaction of the individual to any particular cultural material which confronts him depends on his attention, interest, his assimilative readiness, the value or significance which the new item of experience has for his *ego*, all of which factors again depend on the totality of his past experience, on his biographical *ego*, on the particular and unique configuration of the psychic individual as a historic complex *sui generis*. All this has nothing directly to do with either culture or biology. Thus, the individual emerges as a highly adventitious aggregate of psychic elements and dispositions, unique and unforeseeable, except in its most general aspects.

The problem of the effect of the individual on culture or the historic process embraces aspects similar to the above. Culture as such as well as the historic process are, of course, super-individual phenomena. Now, the ingress of the individual as cause into culture as content, or history as process, must therefore always appear as the crossing of two relatively independent systems, and the exact time, place and purport of that crossing must be recognized as accidental, as unforeseeable, except within certain most general limits. While this would be so even though the individual were nothing but the exact replica of his culture, the fact that this is precisely what the individual is not stands for the added significance and the ever indeterminate possibilities of his breaking into the chain of historic events.

X

Accidental-Contemporaneous Category.—No sharp line evidently can be drawn between this category and the preceding one. Thus, the illustrations cited there can do service here, with a slight change of setting. This is especially true with reference to what might generically be called "foreign contact." All phenomena of diffusion have their contemporaneous aspect as well as their historic aspect of more or less extended character. The same is true of the relations occasionally arising between different aspects of a culture which normally constitute relatively disparate systems. To the illustration cited before I might add here the case of "camouflage" in the present war. Art and military development were two realms of European civilization which, before the war, were practically unrelated. With the rise of the aeroplane came the necessity of protection against the eyes of birdmen above. Thus arose "camouflage." In the domain of art this meant intensive observation from unaccustomed angles of things on the earth's surface, and the application of

the realistic artist's imagination to the creation of disguises mimicking the effects observed. In the domain of military art new possibilities were opened for surface dispositions of guns and fortifications—facts leading to further consequences in military technique—which the development of aerial scouting was about to render well-nigh impossible. As illustrating somewhat similar relations one might cite the occurrence of striking events, whether of individual or of cultural derivation, which result in rapid transvaluations of values. Witness Thomas Mott Osborne's comet-like progress through the clouded skies of criminology, with the accompanying shift in popular sentiment toward prisons and prisoners, a shift so rapid that the balance was lost, bringing with it the serious danger of reaction. Or behold the war situation, once more, with its cataclysmic transvaluations in the time-honored domain of women's clothes.

THE THEORETICAL CATEGORIES AND CULTURAL REALITY

XI

A Vindication of the Categories.—As in any analytical separation of a series which in reality represents a continuum, our categories are not free from certain elements of artificiality which deserve some words of comment. Moreover, it is sometimes worth while to recombine the analytically separated series, thus to reap the full benefit of the conceptual clarification accompanying the analysis. To these two tasks we may now turn.

First of all, it may be objected that any contemporaneous or historical set of phenomena always present in combination those aspects of linkage and level which have here been separated into independent categories. At first sight, this procedure might seem like a gratuitous and unnecessary refinement of analysis. It is, of course, true that every historical or coexistential situation is either psychological-deterministic or psychological-accidental or objective-deterministic or objective-accidental. An apparently more logical grouping of the categories would thus be into historical-psychological-deterministic, historical-psychological-accidental, historical-objective-deterministic and historical-objective-accidental; and the same for the other temporal category, the contemporaneous or coexistential. This would also result in eight categories, with the apparent advantage of less violence being done to cultural reality. The advantages of the procedure can, however, readily be shown to be ephemeral. For if approach to cultural reality is the criterion, then it must with equal justice be pointed out that no cultural situation is ever wholly objective or wholly psychological, but combines aspects of both, according to the point of view or the purport of the analysis.

Again, from still another angle, no permanently and exclusively objective fact can ever constitute part of culture, which itself belongs to the psychic level. Thus the truly objective might be left out altogether, the categories being conceptualized as actively psychological and potentially psychological. Then again the deterministic and accidental aspects of a situation are not mutually exclusive, but represent two sides of the historic reality which is never wholly deterministic nor yet wholly accidental, but comprises enough stabilizing factors to allow the formulation of certain historical principles or tendencies, even though not laws, and enough accidental factors to justify the concept of the uniqueness of historic events. And, finally, the historical or sequential and the contemporaneous or coexistential series do not represent two sharply distinguishable sets of events, but an ever-flowing continuum. Bergson is right when he makes light of the existential character of the present. Tomorrow has barely time to be to-day before it becomes yesterday. What results from this critique of our analysis is thus the rehabilitation of cultural reality, which is never wholly deterministic nor yet wholly accidental, never wholly psychological (or active-psychological) nor yet wholly objective (or potential-psychological), never wholly of yesterday nor yet wholly of today, but combines all these in its existential reality. That such a rehabilitation of culture would result from a critique of the categories as representing but certain aspects of cultural reality, was, however, to be expected: a reconstructive synthesis reestablishes the unity necessarily lost in the process of analytical dismemberment. There is clearly nothing in this experiment *per se* which would constitute a justifiable criticism of the categories. They must stand and fall with the theoretical validity and significance of distinguishing for purposes of analysis the three standpoints from which the categories are derived, namely those of time, level, and linkage. The justification of the standpoints again can only lie in the resulting clarification of concepts, a result of which the endorsement or rejection must evidently rest with those under whose eyes these lines will fall.

XII

The Deterministic and the Accidental in History.—It must have appeared before this that the deterministic and the accidental aspects of history and of culture are intimately interrelated, being in fact both complementary and mutually restrictive. The deterministic tendencies are in various ways influenced and kept in check by the accidental factors. It must be remembered that the deterministic tendencies do not as a rule in themselves contain the dynamic elements, the driving power of development. With certain funda-

mental socio-psychological principles this is very nearly the case, but generally the deterministic aspect merely suggests that, *in case* anything happens within the series or system, it is likely to be one of a number of things or events pointed to by the tendency. Conceptually these possible events may be designated as the limiting values of the deterministic tendency. The driving power, the "yeast" of history, is supplied by various accidental factors, in origin individual, or socio-psychological, at any rate, external to a given system. Not that these accidental factors must of necessity fall into the "foreign contact" group. If the culture is at all complex, the processes of cultural self-fertilization through interactions between smaller systems included in the cultural group or nation are quite adequate to supply the "yeast" by themselves. Among these smaller systems the individual is one, for, under these favorable conditions, the individual is sufficiently distinctive as a system of relations and sufficiently unique as content to have through his creativeness, originality, personality, will, non-conformism, crankiness, *etc.*, a marked effect on the cultural content as well as on the chain of historic events. In small and relatively isolated groups, such as are typical of primitive conditions and occur sporadically in higher civilizations, the drag of socio-psychological and institutional inertia is such that non-conformism is exceedingly rare, that individual creativeness itself is robbed of its germinating fire by the unyielding resistance of the channels through which it is forced to operate. In such situations the "yeast" of foreign contact comes like the breath of life, whipping into shape the heretofore unrealized possibilities of the deterministic tendencies. Again, only the *what* of events is within limits deterministic; the *when* and only to a lesser extent the *how*, are accidental. Also, it must be remembered that the limiting values of determinism are, in history, practically never fixed with absoluteness, but merely consist in a limited number of possibilities. Which way the dice will fall, what will actually happen, is a matter of accident. Thus, the accidental appears, after all, as predominant in history, when it comes to the particular *when*, *where*, *how*, and even *what*, of events. The concept of the "uniqueness of historic events" is thus vindicated. Accident decrees whether anything will happen, when and how it will happen, which one of several possibilities will be realized, whether this actualization of a potential event will occur through the maturing of certain elements within a system or through the ready acceptance of an appropriate element coming from without, by foreign contact.

The accidental itself, on the other hand, is restricted by the deterministic factors. Certain things coming from without a system or even originating from within will not "take." The new element

does not find a deterministic current strong enough to carry it to fruition, or it may even be opposed by a contrary current. Certain things, of foreign or inner origin, "mean nothing." Examples of this are plentiful when two cultures of greatly different level come into contact. Two Australian tribes, or an Australian and a Melanesian one, will exchange cultural elements extending, perhaps, along the entire line of their cultural possessions, and all might prove fruitful and stimulating. The same will hold with reference to two representatives of modern civilization. When, on the other hand, a modern group comes into contact with one of those primitive tribes, the mutual stimulation is slight or follows certain very narrow channels. The primitive group adopts certain cruder products of our material culture, without, however, learning how to make them; it may borrow certain externals of etiquette and address, but the foreign art, religion, social system, legal form, "mean nothing" to them, they "fall" completely "flat," they glide off the surface of their culture without leaving as much as a scratch. The same, of course is true with reference to the effect in the reverse direction. Again, other elements encounter a reception in a culture which, by its readiness and assimilating quality suggests the support of a deterministic tendency. Then, we say, an event occurs at the "psychological moment;" or certain tendencies or potentialities are "in the air;" a new element finds ready acceptance, if it chimes in with "the spirit of the times;" a tribe, a nation is "prepared" for certain developments or innovations. In certain cultural situations, when the deterministic elements are pronounced, then, especially if the possibilities of the situation are limited, a thing or event, or one of a few, is almost "bound" to appear, on any number of provocations. In such a case the situation may be designated as overdetermined. This is the determinist's long suit. With reference to great men he will say: "if not he, then someone else;" similarly, with reference to the theory of history: "it is important not whether the thing did happen, but whether it could happen," meaning that, although the particular thing may not have happened, the "time was ripe for it," and another equivalent thing either might have happened, or did so with high probability. But withal there is no denying the overwhelming weight of accidental factors. Of these, those belonging to the "foreign contact" group are of special importance. Not only do they constitute the "yeast" of the historic process, but they bring content; they stimulate through "the shock of novelty;" they shine by the "prestige of things foreign;" they raise cultural contents into consciousness through contrast, and thus invite comparison, provoke ratiocination, engender wideawakeness.

The new content, moreover, increases the variety, complexity, richness of a culture.

Thus the accidental and the deterministic appear as two inseparable ingredients of the historic process. Leave out the deterministic, and history becomes a hodge-podge of adventitious things and events, a something without rhyme or reason; leave out the accidental, and grave injustice is done to reality, for law and order is then claimed as a fact, whereas it is at best but an aspiration, a tendency, not strong enough to have its way wholly, but fully strong enough to regulate, and to that extent to control, the stream of accidental fact.

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FREE WILL AND INTUITION

THE problem of free will appears to be a problem only because, as Bergson well says, the conditions are not clearly stated. The difficulty of stating the conditions is due to a hazy idea of the meaning of cause and effect.

One of the earliest experiences a human being has is what the intellect defines as a "succession in time." This sort of experience is with us constantly. We know some things happen before other things happen. This knowledge is due to memory. It is this experience which underlies our concept of cause and effect. Without such an experience cause and effect would mean nothing to us. But before the concept of cause and effect can enter our consciousness, to this experience must be added another experience which the intellect defines as "repetition." The oftener a succession in time is repeated the stronger is our belief in cause and effect. Especially is this belief strong if we can repeat the succession at will in a laboratory. Given this possibility, science steps in and says the earlier event bears to the later event the relation of cause to effect. This is all that science means by cause and effect.

Now when we say a thing is repeated, just what do we mean by that? Suppose I go into a laboratory to make an experiment with a falling weight. I used an Atwater machine and measure the time it takes a weight to fall. By this I mean I compare the space passed over by a certain motion of the weight, with the space passed over by the motion of the hands of an accurate clock. All that science does when it thinks it measures time is to compare the spaces passed over by different motions. Very well. I record my results. I then do the same thing the next day and the next and so on. I have then recorded what I call a repetition of a succession in time. It is from

just this foundation that science starts. Now have I repeated the experiment? It appears so and all science makes that assumption. Let us see, however, just what the phenomenon really was. When I first let the weight fall it moved not only relative to the machine and the floor, but there was a certain relation between the weight and every other particle of matter in the universe. The phenomenon really consisted of the whole of these relations. I ask then, was the phenomenon repeated? Certainly not. But just because, out of the whole phenomenon only a very small portion of all the relations held any interest for me, *i. e.*, could affect my possible actions, I restricted my attention to that small portion and found it could be repeated. Hence I say there is such a thing as repetition. Science is a tool designed to help action and it is justified in drawing conclusions from a portion of the whole relative only to possible actions, but can philosophy do this sort of thing with consciousness? To draw conclusions from a portion of the whole is to say that the whole consists of parts. Can we say that of consciousness?

By consciousness I mean the living *present* as we know it in ourselves. Now the first thing to say about the present is that it is lived but can not be described. A little thought will prove this. The minute you start to describe the present, the present has become at once the process of describing the past. No matter how we struggle and what subtleties of reasoning we introduce, we can not get away from this fact. If I ask you to draw a picture, but move the picture rapidly before your eyes, the first thing you will say is, "Hold it still. How can I draw it if you keep moving it about?" Just so. But you can not hold consciousness still and remain conscious. How then can you describe it? If you can not describe it why do you say it is composed of parts? If it is not composed of parts how can there be repetition in it? What you describe is the *past*. The past is fixed, static, and has special qualities and in describing it you will naturally pick out similarities and from this you get the false idea of repetition in consciousness. Once you realize that the *present*, which is consciousness, is lived but can not be described, while the *past* can be described but is not lived, then you will see that what you take to be repetition in consciousness is really nothing but repetition in the past. You examine the past but think you are examining the present.

The same misunderstanding shows itself in the problem of motion. Some philosophers believe they can describe motion. They start in by saying they are going to describe a motion from *A* to *B*. But if the motion is from *A* to *B* either it has stopped at *B* or has gone beyond *B*. If it stopped at *B* it no longer exists and how can you describe what does not exist? On the other hand if it has

gone beyond *B* nothing you say about *AB* is connected with the motion because by the hypothesis the motion is not there, but somewhere else, namely beyond *B*. What is described is not the motion but the path passed over by the motion. You describe space but think you are describing motion. This is the same kind of error noted above. Now in consciousness, motion experienced is properly called time, or, as Bergson says, duration. Time, like the present, is experienced but can not be analyzed, while space, like the past, can be analyzed but is never experienced. It seems absurd to say that space is never experienced but a little thought will prove it. A baby infers space by finding that more time is experienced between sensations *A* and *B* than between sensations *B* and *C* when it is doing what we call creeping around. Space, as we know it, is the first inference we draw from our experience of time. We draw this inference so early in life that we forget that it is an inference. It is, however, just that and it is extremely probable that this inference is not drawn, in the shape we draw it, by animals and insects because their intellectual life must be different from ours.

The lack of repetition in consciousness means the lack of the ability to predict, because prediction is based on repetition. You can not predict the result of a first event, you can only observe that result and use your observation as a basis from which to predict the result if the event is repeated. Therefore, you can predict nothing concerning consciousness and that is all that is meant by free will.

We have found then a radical distinction between the present and the past, time and space. We can also find a distinction just as radical between instinct and intuition on the one hand and reason on the other hand.

We will start first with instinct and I will cite the well-known case in insects so thoroughly studied by Fabre. The yellow winged *Sphex* chooses a cricket for its victim. The cricket has three nerve centers which control its three pairs of legs. The *Sphex* stings the cricket first under the neck, then behind the prothorax and then where the thorax joins the abdomen. The result is that the cricket is paralyzed, it can not move, but it does not die at once. The eggs of the *Sphex* are then laid and the young, when hatched, have fresh meat on which to live. This is an example of instinct which can not be explained by reason. It is not possible to explain instinct intellectually, but a reference to a certain instinct in man may make it understood. Consider the sex act upon which reproduction depends. Before puberty you can reason with children about this act as much as you like and they will not understand what you mean, but after puberty reasoning is superfluous. Without any intellectual knowledge of the body or the race value of the sex act, a boy and girl,

under proper conditions, will perform the act the right way without any hesitation. Why? Because, when growth reaches a certain point instinctive knowledge appears with it. Now the difference between instinct and intuition is that instinct is limited by the growth and condition of the body while, except in the abnormal, intuition is not limited in this way but is dependent upon what we call experience, *i. e.*, conditions the body lives through. But it is like instinct in that it gives us a knowledge no reasoning can disturb and unhesitatingly we act on this knowledge.

What now is the difference between intuitional and intellectual knowledge?

As it happens, I was one of the first in this country to take up the study of aeronautics at about the year 1890. My study convinced me that it was possible to fly, and I did at that time and later publish reasons why it was possible. These reasons, however, produced no effect. At the present time many have seen machines flying through the air, they know flying is possible but they did not get that knowledge through reasoning, they actually saw the machines fly, *i. e.*, the knowledge they have of flying is intuitional, not intellectual. They can not give you any reasons why the machine flies but they know it does fly and no amount of reasoning can convince them that flying is impossible, whereas before they saw a machine fly no amount of reasoning could convince them it could fly, as I very well know. That is only to say "seeing is believing." But what does this mean in philosophy? It means that intuitional knowledge, which is the knowledge we get direct from experience without using our reason, is stronger than the knowledge we get by using our reason, which is intellectual knowledge.

One of the greatest changes in educational systems is the move from the text-book to the laboratory. But in philosophy this means the substitution of intuitional for intellectual knowledge.

Bergson is very clear in showing thoroughly the limitations of the intellect, but when he describes intuition his position seems to me to be weak. He seems to make of it something rare, exceptional, subtle, coming only to a few people. This is not so. Intuition has too long stood for something elusive, on the order of the occult. It is nothing of the sort. It is a common fact in experience.

Even in those sciences which seem to be entirely intellectual, like mathematics, it can be shown easily that intuition is their foundation. Our knowledge of axioms is entirely intuitional knowledge. Every premise from which reasoning starts is intuitional knowledge, or if not, the reasoning has to go back to the point where the premise is intuitional knowledge.

It will be objected that while this sort of knowledge may be called intuitional since it comes direct from personal experience, is not arrived at through reason and hence can not be called intellectual, still this is not what is ordinarily called intuition. This is true. Generally the word intuition is used to mean that which makes us believe and act without reason and yet which seems not to be traceable to anything in our experience. It appears to come "out of the blue" so to speak. It is just this characteristic which makes the mystical type of man believe strongly in intuition and the practical type skeptical of it. This characteristic of what, ordinarily, is called intuition, is due to the fact that an intuition of this type can not be traced to any particular part of our experience. But this is simply because it issues from the *whole* of our experience up to the time of the intuition. It is only this type of intuition which generally goes by the name of intuition; the other type, which issues from some definite portion of our experience, is called "common sense." The difference between the two types is just the difference between the free act and the not free act. The former issues from the *whole* man and as the *whole* man is never repeated the act is free; the latter issues from some portion of him, *i. e.*, a habit, a reflex or a reaction to stimulus which can be repeated, hence the act is not free. If I play the violin with exceptional skill upon a certain occasion, the particular skill shown can not be traced to any particular day's practise, it issues from the *whole* of my experience as a violinist. All artists understand this. All artists understand that the value of their work is determined by the quality of the intuition which issues from the *whole* of their experience at the moment they start creating.

So, what is called "intuition" issues spontaneously from the whole of our experience, while what is called "common sense" issues from some particular, limited part of our experience. The philosopher, however, is bound to hold "common sense" to be intuitional knowledge, and he knows, if he is wise, that it is far superior to intellectual knowledge.

In spite of the fact that the man of the street reads little philosophy, the teachings of philosophers filter down to him through the schools and it is unfortunate that we are at present under the influence of the teachings of a philosopher whose theory of knowledge admitted only the intellect, namely, Kant.

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REVIEWS AND ABSTRACTS OF LITERATURE

The Belief in God and Immortality. JAMES H. LEUBA. Boston: Sherman, French & Company. 1916. Pp. xvii + 340.

An historical account is given of the distinction between the primitive and the modern belief in immortality and the present status is presented statistically. Belief in God, which was treated genetically in an earlier work by the author is here also investigated by the questionnaire method. Both beliefs are shown to be waning at the present time in the United States, among the groups of scholars questioned. The questionnaire has been used in this study with more than ordinary care and the results are well tabulated, illustrated and interpreted.

The decline of interest in the belief in immortality naturally lessens zest for the historical phases of the problem and these are inaccessible to empirical inquiry. On more theoretical and speculative grounds the author holds that there have been two distinct beliefs with reference to life after death. One had its origin at an earlier stage in phenomena of perception, memory, and childlike imagination. It was a belief in ghosts and it arose from dreams, memory-images exteriorized, metamorphoses in nature, reflections and echoes and the like. No corresponding account is suggested of the origin of the modern belief. It is characterized, however, as concerned with the soul rather than with the ghost, as a state definitely desired and not merely expected, and as bound up with specific moral ideals. Probably a fuller study of the phenomena than the scope of this volume permitted in both the primitive and modern forms with the aid of social psychology would indicate greater continuity while allowing the appearance of new factors. Indeed Professor Leuba admits that in its early form the belief was accompanied by desire, and that in Christianity where the desire and the moral ideal are pronounced, there still persists belief in ghosts and in the survival of the body.

Difficulties appeared in the investigation of the belief in God which were not found in the study of immortality. Many were not sure of the meaning of the questions. This was particularly true of the philosophers. There may be more significance in this fact than is specified. The questions are precisely such as the philosophers, more than any other of the groups, consider. They are probably as critical and as free to express themselves. The questionnaire called for acceptance or rejection or indecision on this proposition: "I believe in a God in intellectual and affective communication with man, I mean a God to whom one may pray in the expectation of receiving an answer." What should one reply who thinks of God

as "the common Will"? or as the Social Mind? Professor Leuba seems to think the answer should be negative, if one may judge from the last lines on page 272.

Various replies suggest that some think that God is not the same to religious experience as to philosophical thought. Religion is a practical activity and it tends to emphasize personal relations and attitudes. Philosophical reflection is more detached, less concrete and vivid. Material objects appear differently in the practical use of them and in reflective analysis of them. One wonders what such a questionnaire would achieve with reference to "Uncle Sam." No one believes that there is a particular person of a certain height and weight and color of eyes answering to that name. Yet a very substantial reality is designated by it.

The views of the author appear freely in the discussions of the statistics. He holds that "detailed acquaintance with the orderliness of physical nature dispossessed God of that realm" and implies that the same is true of the mental realm (p. 240). Christianity is identified with its reigning forms (p. 248), which one should hardly strive to preserve. Human society generates moral ideals and the impulses to realize them, and this is a sufficient living creed (pp. 330 ff.).

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The History and Practice of Psychanalysis. By POUL BJERRE, M.D., translated by ELIZABETH N. BARROW. Boston: Richard G. Badger. 1916. Pp. 294.

The first part of the book is an attempt to gather up the psychotherapeutic strands of the last century, beginning with Kant and Feuchtersleben, on the one hand, and, on the other hand, the schools of hypnotism founded by Liébeault and Bernheim at Nancy, with their reaction on Wetterstrand. Bjerre then traces the rise of Freud, Dubois, Forel, and Moll, and the development of the present psychoanalytic schools. Finally, he presents a description of Adler's theories. He barely touches upon the work of Jung, although Jung's influence is seen throughout the book.

The latter half of the book deals with such questions as the nature of hypnosis, and the relative importance of the conscious and the unconscious.

The book, although containing many passages that are readable and stimulating, is marked by its careless English. This fault, I suspect, is due to either a lack on the part of the translator of psychoanalytic knowledge or to an insufficient understanding of our own or the original language.

One example of faulty terminology occurs on page 86. Here Freud is made to say that the four psychological processes in the construction of the dream are as follows: (1) Condensing, (2) displacement, (3) *sensualizing*, (4) censoring. What the author means to convey by the word *sensualizing* is the process of dramatization. In a brief note he explains the term by stating that "the dream has an inclination to present everything in acoustic and visual pictures. It does not approve of the narrative form but is, in its essentials, dramatic." Why not, then, use the term dramatizing, instead of the misleading *sensualizing*.

This is but one of a number of inaccuracies in the description of Freud's theories. Mistakes occur also in the delineation of the theories elaborated by Adler and Jung. Therefore, with the exception of a very excellent chapter on the nature of hypnosis, the book has little value as a history and practise of psychoanalysis.

As a practise of psychotherapeutics by Poul Bjerre, however, the work is extremely interesting. The personality of the author shines throughout as that of a natural born psychotherapist of wide reading and extensive practical experience. The very interesting history of the analysis and cure of a case of paranoia of ten years' duration bears evidence of Bjerre's undoubted skill and ability.

We trust that Bjerre's future works will be put into the hands of a more able translator. Unquestionably a man of his development has important messages to give to the world, especially to those of us who are working in the same field.

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NEW YORK.

JOURNALS AND NEW BOOKS

PSYCHOLOGICAL CLINIC, Vol. XLI., No. 1. March 15, 1918. *Preliminary Impressions of the Standard Revision of the Binet-Simon Scale.* J. E. WALLACE WALLIN (pp. 1-15).—Preliminary impressions of the scale from its use may be summarized as follows: The amateur will find it much more difficult to administer the Stanford scale than the old Binet scale, while anyone who merely tests subjects occasionally will certainly not be able to do satisfactory testing. We doubt whether some of the tests should be administered according to the Stanford formulas, while we also question the propriety of even including some of the tests. We are not yet ready to analyze our Stanford records, but it is evident that the scattering is very extensive in this scale, apparently more extensive than in the 1908 and 1911 editions. The practical significance of this fact is a problem for future study. Altogether, we are in-

clined to feel that the Stanford revision marks some advance, but we feel that it would be unfortunate if the scale were to be regarded as a finality. *A Study of 100 Retarded Fourth Grade Pupils Tested by the Binet Scale*: WILLIAM I. LACY (pp. 16-23).—A study of the slow progress of children of the fourth grade in a certain district in Illinois was made. The conclusions drawn are: The systems of promotion generally in vogue in this country are unfair to the child, uneconomic and unscientific; and the use of intelligence tests for promotion should be adopted. Having white and colored children together in the same schools is educationally and socially unwise; separate schools for colored children should therefore be established. Feeble-mindedness should be detected through the use of intelligence tests, and children found to be feeble-minded or very nearly so, should be placed in regular institutions, schools, or rooms equipped to take care of them. The Intelligence Quotient should be found for all children, and the subject matter and methods of instruction adapted to the intellectual capacity, rather than the chronological size. *Clinical Reports. Reviews and Criticism. News and Comment.*

Efros, Israel Isaac. *The Problem of Space in Jewish Mediaeval Philosophy*. New York: Columbia University Press. 1917. Pp. 125.

Peterson, Joseph, and Quentin, J. David. *The Psychology of Handling Men in the Army*. Minneapolis: Perine Book Company. Pp. iii + 146.

Roback, Abraham A. *The Interference of Will-Impulses, with Application to Pedagogy, Ethics and Practical Efficiency*. Princeton, N. J.: Psychological Review Company. Pp. viii + 158.

NOTES AND NEWS

THE *Philosophical Review* for September, 1918, contains a very interesting article by André Lalande, on "Philosophy in France in 1917." In spite of the way in which the war has demanded in France all the energies of the nation, philosophy there has been kept going to an extent that shows very strongly how genuinely intellectual and free the French really are.

The following are some titles to which M. Lalande calls attention: *La Force et le Droit*, by M. R. Anthony, an examination of the "droit biologique," and *Devoirs et perils biologiques*, by Dr. Grasset. An article of distinction in the *Revue de Métaphysique* is by M. Davy, in which the writer examines the question *Why is the pledge of one's*

word binding? the bearing of which is obvious. M. Lévy-Ullmann in a very interesting and learned volume, *Le Définition du droit*, "reviews all the classical definitions of law and discusses their merits and defects."

Popular opinion in France is increasingly favorable to the idea of a Society of Nations, and has more and more confidence in it since the idea is regarded as sponsored by President Wilson. On this subject two important volumes have appeared, both entitled *La Société des Nations*, one by a jurist, M. Maxime Leroy, and the other by M. Edgard Milhaud, Dean of the Faculty of Social and Economic Sciences at Geneva. There is also a pamphlet by M. Ferdinand Buisson, entitled *Les Principes de la Société des Nations*.

Criticisms of German philosophy naturally can hardly be enumerated. M. Lalande mentions, however, *Science française et science allemande* by Dr. G. Papillaut, professor at the Paris School of Anthropology, and *Morale kantienne et morale humaine* by M. Sartiaux, a writer of conservative tendencies. One young professor at the University of Geneva, M. Charles Werner, defends the German philosophy of conservative associations. He regards Hegelianism as still the noblest and most satisfying form of philosophy.

In psychology there is a good treatise on *Memory* by M. Dugas, and a number of studies of mental disturbances due to the war. *La guerre et le progrès* by M. J. Sageret represents excellently the sort of philosophical ideas popular among the mass of educated people who are not specialists. A good little book is, *Le science du travail et de son organisation* by Mlle. Joteyko. Dr. Bernheim defends in *Automatisme et Suggestion* the position of the school of Nancy, while M. Boirac's latest book, *L'Avenir des Sciences psychiques* discusses the phenomena supposed by some to call occult powers into play, and which M. Bernheim rejects as illusions.

Two notable deaths occurred during 1917, that of M. Félix Le Dantec and that of M. Émile Durkheim. "Félix Le Dantec had the training and career of a professional man of science. He taught biology at the Sorbonne. But he always felt the influence of the solid mathematical, and particularly physical, discipline with which he began his studies." "Émile Durkheim was essentially a philosopher, although he had won his reputation as a sociologist. Like many philosophers, he was a man of intense feeling. By the constant exercise of his will, he imposed a rigorous form on his ideas. But the natural force of his imagination and emotion, which he had disciplined but not destroyed, was one element in his great influence. . . . He died prematurely at fifty-nine years of age, exhausted by a great sorrow [the death of his son fighting against the Bulgarians], and perhaps also by the excessive labors in which he had sought relief."

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

DUALISM IN ANIMAL PSYCHOLOGY¹

THE second edition of Professor Washburn's text-book in animal psychology indulges as little as the first in controversy over matters of general theory. Indeed the chief purpose for which the book was written (as the author stated in the Introduction to the first edition) was to bring together, and make available for the ordinary student, the simple facts whose discovery is the result of experimental method in comparative psychology. And it is the rapid accumulation of such facts discovered since the first appearance of *The Animal Mind* in 1908, that has led the author to prepare a second edition, a task which involved the rewriting of more than half of the earlier volume. Of the growth of theoretical controversy which has accompanied this rapid advance in comparative psychology during this decade, little intimation appears in the text. Text-books are not, of course, the place to discuss such subjects. Yet the reader who peruses the pages of *The Animal Mind* with the issues of current controversy in the back of his head may well find food for philosophical reflection. For the interesting facts of animal behavior which the author sets before us in so orderly and clear a manner are not, after all, presented merely as interesting facts. They are selected and ordered that they may serve as evidence from which the animal mind—or minds—may be *deduced*. As the author herself remarks in the Introduction, the book might properly be entitled *The Animal Mind as Deduced from Experimental Evidence*. It is the conception of the object of psychology, implied in this title and explicitly laid down in the opening chapters, which gives pause to the theoretically-minded reader.

The conception is a familiar one. The only mind which the psychologist, or any individual, can know is his own mind; and this he knows directly and immediately. The only way in which the psychologist can learn to know the mind of another conscious being is to ask himself how he would feel and think in the other's place.

¹ M. F. Washburn, *The Animal Mind*, second edition, revised. New York: The Macmillan Company, 1917.

Just in so far as he is able to answer this question, can he gain any insight into the other's mind. It evidently follows that each of us can know the conscious processes of others only in so far as they are like our own. In so far as they differ from our own they must remain a sealed book to us. Furthermore, the feelings and thoughts of others to be understood must not only *be* like our own; they must also express themselves in similar words or acts. It is a fundamental postulate of all psychology, human and animal, that like behavior is evidence of like conscious processes. There are thus great difficulties lying in the path of the comparative psychologist. He may perhaps hope to reconstruct imaginatively the feelings of the questing dog or the racing horse; but to put himself in the place of the buzzing wasp or the wriggling worm is beyond his powers. Nevertheless, precarious and devious as the path of the comparative psychologist must be, it is the only way open, and some progress is possible, and has, indeed, already been made.

Thus, according to this conception, two distinct but equally important tasks confront the investigator of the animal mind: first, the discovery and description of the facts of animal behavior; second, the psychological interpretation of those facts. In order successfully to accomplish the first, training is necessary to distinguish the simple facts from the interpretation of them—what is actually seen from what is merely inferred. But since what can be observed is only external behavior, *i. e.*, physical movements, the peculiar task of the psychologist, as distinct from the biologist, remains to be performed: the inference as to what conscious processes, if any, accompany these acts.

The frank and clear-cut statement of this familiar position which is given in the opening chapters raises squarely a number of fundamental problems. What is the aim of psychological science? Is the goal of the psychologist the imaginative reconstruction of the experience of the conscious being he is studying? Surely not, since the pursuit of science is essentially a social enterprise, and the body of facts and theories constituting a science is a common object. Psychology, in so far as it is a science, we should all agree, consists in the *description* of the facts concerning minds, and the *statement* of the systematic interconnection of these facts.

What Professor Washburn and others of her school evidently mean to claim is that it is only in so far as we can imagine the sensations and feelings of another that we are prepared to give a psychological account of them, or understand the account given by any one else. Now this claim, while it is so plausible that to question it may seem mere perversity, I find great difficulty in admitting. For one thing, it carries with it the acceptance of a whole body of

logical doctrine to which there are grave objections. This is too large a subject to enter upon here. Viewed more directly and empirically, the claim raises equally serious doubts. The old objection, that, if our knowledge of the sensations and emotions of animals depended on the possibility of translating them into terms of our sensations and emotions, no psychology of the lower animals would be possible, seems to me unanswerable. That after so staggering a presentation of the difficulties of comparative psychology as our author gives us in the first chapter she can yet believe in the fruitfulness of the enterprise, is an arresting observation. One is compelled to ask whether the enterprise be, after all, the sort of intellectual adventure it is pictured as being.

Let us examine it a little more closely. When I see my dog running along the walk with his nose to the ground, and I know one of the children went that way to school a half-hour ago, I describe his experience as an attentive discrimination of the odor of the child with a feeling tone of pleasurable excitement. This is a description which has an intelligible and fairly definite meaning to any one of us. And yet no one of us ever had such a total experience nor even, perhaps, experienced a single one of the essential elements entering into it. The individual human being has for us no distinctive odor when he is clean, whereas we know that for the dog each person of his acquaintance has an unmistakable odor, and that the characteristic odor of his master is highly agreeable in a peculiar way. To me, as I suppose to most of us, the idea of a distinctive odor attaching to a person is unpleasant. Even if this were not so, I could not imagine an odor having the peculiar emotional coloring which the odor of his master has for the dog—which leads him, for example, to find solace and contentment in lying on an old glove or other article of clothing. It is true I have had various experiences of pleasurable excitement attaching to odors. The smoke of a locomotive always had a peculiarly delightful exciting quality; but it does not seem to me that my understanding of the experience of the dog who follows the child so eagerly is brought about by calling up this pleasurable excitement and translating the dog's experience in terms of that. It even seems to me very improbable that the description of the dog's experience would be unintelligible to me even though some accident had deprived me in youth of all sense of smell. Is Helen Keller debarred from entering into an intelligent discussion as to whether the white rat has color-vision, because she can not imagine red and blue? That her blindness would entail serious disadvantages to her psychological study of vision is undoubtedly true; but that it would make the psychology of vision unintelligible to her is not credible.

The crucial question is: What do such psychological terms as red

and anger and unpleasantness and space-perception *mean*? Does each denote a "this," an incommunicable bit of private experience, which each one of us identifies to himself by calling it up in imagination? If so, how can we manage to be mutually comprehensible? Perhaps our author would answer that while I do denote such a "this" by red or anger, I may enable you to identify a similar "this" by describing it in terms of the external relations it bears to stimulus on the one hand and response on the other, just as a description may be used to indicate the denotation of any proper name. What red or anger *denotes* is a bit of private feeling, and it is this that the psychologist studies. To this contention the reply is that such a merely private and incommunicable somewhat can not become the object of scientific investigation. And if this reply seem a piece of *a priori* dogmatism, we may point to the empirical facts themselves.

The psychological uniformities holding of sensation-qualities of color, such as the laws of color-contrast, relation of brightness and saturation, *etc.*, are all *formulations of uniformities of discriminative responses to objectively standardized conditions*. Does the psychologist wish to determine the complementary of a certain shade of red? He selects a piece of colored paper of a standard make and grade, gives it a determinate illumination, places a normal observer in a standard relation to it, *etc.*, *etc.* In short, what he is studying is no "this;" it is the standard paper in a certain complex set of relations to the observer. The importance and the significance of the introduction of experimental method in psychology lies precisely in the fact that it provides a means for the determination of psychological phenomena. *The phenomena thus investigated become in effect functions of the factors constituting the standardized conditions of the experiment*. It must not be suggested, however, that this means the identification of psychological research with either physical or biological science. The psychological standardization of the conditions of experiment is almost never equivalent to a physical or mechanical standardization of them. What may constitute a wide variation in conditions mechanically considered, may well fall within the limits of psychological constancy for the particular experiment in hand. Nor is this determined by an unchecked introspection that a given variation does not "look" or "feel" different, but by further experiments which act as mutual checks.²

² For example, an illumination may be psychologically constant, even though there be mechanically measurable variation. But a mechanical variation which is too slight to be directly discriminated may nevertheless count as a psychological variation. If it should be found that such a change in degree of illumination was followed by a constant variation in the results of observations of mini-

In short, one of the most important tasks of the psychologist is the determination of what constitutes the standardization in typical cases.

What has just been said refers primarily, of course, to the investigation of sensation-qualities, which is one of the fields where experiment has proved most fruitful. But it is not less true that other psychological terms such as those mentioned above—anger, unpleasantness, space-perception—denote phenomena which can be determined only by the relations which they bear to stimulus and response. What the psychologist actually means by anger, for example, is an emotional attitude which manifests itself in a certain characteristic mode, or rather modes, of behavior. It is often asserted that anger is first known as a peculiar inner state by each individual, which is later ejectionally attributed to others as a result of inference from behavior. Now as a genetic account of the empirical origin of our idea of anger, this seems to me to be on a par with the explanation of simple spatial ideas as due to inferences made in early childhood from differences in sense-data. The child surely perceives his nurse's anger as immediately as he does her position between the chair and the table—nay, even more directly, since he instinctively responds to her loud threatening tones and her scowling face, while he must learn by experience what modifications of response the position between chair and table call for. But neither the perception of anger nor that of position is the result of *inference*, but of something much simpler and more direct. Later on, when anger is discriminated by name, it is as likely to denote the attitude Daddy will have if one is naughty, as one's own feelings when one throws a toy across the room or slaps sister.

It is an experience which all of us must sometime have had, to be suddenly accused of being angry in the midst of eager discussion. After the first tendency toward indignant denial, we may, perhaps, recognize the justice of the accusation. Now on what is such recognition based? Is it not largely because we catch the echo of our own raised voice, or become aware of our menacing attitude toward our companion? Sometimes, indeed, we may be frankly doubtful whether we were angry or not, if there be no manifest evidences of it. It is, of course, very difficult to make a reliable introspection; one is inevitably prejudiced. But it seems clear to me that what we mean by "being angry" is not the enjoyment of a subjectively identifiable mental process. No psychologist, I venture to assert, ever discriminated such a process and mentally labelled it "anger" mal changes in grays, or that the rate of eye fatigue varied with the change in illumination, such change would be classed as truly psychological.

for purposes of scientific reference and comparison. Suppose he had done so, and tried to classify later experiences as "anger" or "not-anger" by comparison with this. He would find himself in serious perplexity, first, because it is very difficult to recall a past emotional state for purposes of comparison; and second, because he would probably find himself using the term in an arbitrary way, and making statements which could not be verified by others. As a matter of fact "being angry" seems to cover a somewhat indefinite range of feeling. Cold, still anger is a somewhat different feeling from hot, passionate anger; nor does it seem probable that a psychologist continues to classify them as varieties of a common species because of any identical element in the two experiences. What psychology has done, indeed, just as what every science must do, is to take over classifications and distinctions from common sense and gradually to reconstruct and systematize them. In the case of the emotions, psychology has as yet made but slight progress. Anger and fear as used by psychologists are practically common-sense terms. They can be made scientific, *i. e.*, be given that definiteness of denotation and connotation which science demands, only as they are formulated as determinate functions of behavior.

If the foregoing contention is just as regards emotion, it is more evidently so as regards such a phenomenon as space-perception. Space-perception, unlike red or anger, is no particular conscious experience. Rather it designates a class under which practically all our sensory experiences fall. It can not be said of space-perception, as it is said of a sensation-quality or an emotion, that it is something we first become acquainted with in our own experience and then attribute to others. In one sense of that much-abused term "acquaintance" I am indeed acquainted with space-perception, since my experience includes or involves it; but this sort of acquaintance does not take me very far toward my goal of scientific identification and description. Just what are the specific differentiae of space-perception? The attempts to answer this question constitute a long chapter in psychological controversy. Professor Washburn judiciously speaks of it as "involving the simultaneous awareness of a number of sensations consciously referred to different points in space." But what is a conscious reference to different points in space? It must include the experience of the two-year-old child who persistently tries to put the largest block of his nest of blocks into the smallest, and the experience of the skillful dressmaker, who after a brief inspection of an illustration of a complicated garment cuts a pattern for it offhand. "Conscious reference," or "localization," would seem to stand in need of further analysis before it can be made the basis of definite and hence fruitful inquiry regarding the

experience of the sea-urchin or the stickleback. That a scientific study of different levels or types of space-perception and of their relationship to each other can be made without constant dependence on standardization in terms of stimulus and response does not seem possible. Space-perception is not an inner mental state whose relations to behavior are merely external. On the contrary, psychology is forced to treat the relationship to response as constitutive and determinative of the phenomena it studies.

At this point it seems well worth while to raise the following question: How different in actual procedure and in results is a study of animal mind and behavior carried out from the standpoint of such a dualism as our author's, from a similar study made by a behaviorist?

The bulk of *The Animal Mind* is taken up with an investigation of the number and kind of sensory elements which enter into animal consciousness at different levels. There is first a chapter on sensory discrimination in general, dealing with the problem as to what constitutes evidence for the presence of distinct sensory qualities. This is followed by chapters on the special senses: the chemical sense (including taste and smell), hearing, and vision. Later chapters deal with space-perception, modification of conscious processes by experience, and lastly attention. In the chapter on the criteria of sensory discrimination, the author argues that the fact that an animal responds in some way to a given stimulus, *e. g.*, sound waves, is not evidence that the animal consciously discriminates such a stimulus as qualitatively distinct. "It is not," she writes (p. 57) "the number of stimuli to which an animal reacts that can be taken as evidence of the qualitative variety of its sensations, but the number of stimuli to which it gives different reactions." Even this, however, we are told, is probably too simple a statement of the case. A given type of stimulus, *e. g.*, sound waves, may be perceived as qualitatively distinct even though it brings out no specific direct reaction. If it brings out distinctive modification of other reactions we give it a place among the sensation-qualities of the animal's experience.

Now while the language used is different, and while the problems set for investigation are differently formulated, the difference between the treatment given in this and the succeeding chapters, and a frankly behavioristic treatment is far less radical than one might suppose. To ask: "Does the white rat have color-sensations, and if so which ones?" is not practically different from asking: "Does the white rat specifically discriminate chromatic wave-lengths?" And the case is similar throughout the whole range of sensory discrimination. The actual concrete problems which the dualistic psycholo-

gist is interested in investigating are essentially the same problems which the behaviorist is led to study. What the dualist does in effect is to *add on* an interpretation which can be only characterized justly as "metaphysical." By this I mean that just in so far as the dualist claims to infer from the facts of behavior the existence of an inner order of being, related in an inscrutable manner to those facts, he is stepping outside the bounds of scientifically verifiable hypothesis and entering upon purely metaphysical speculation in the bad sense of the term. To the actual empirical investigation of animal psychology such an attempted interpretation adds no significance.

The "epiphenomenal" character of such interpretation comes out clearly in the treatment of various topics. Indeed the treatment of the criteria of the presence of consciousness itself is a case in point. In the early chapter on the *Evidence of Mind* the author argues that none of the proposed tests for the inference of mind from structure or behavior is conclusive. Her conclusion is that no evidence exists for either denying or affirming the presence of consciousness in animals below the very highest, and that "for all we know it may exist in simple forms until we reach the very lowest of living beings" (p. 37). Such a position is, it seems to me, inevitable so long as one conceives consciousness as a superadded thing related to behavior in a purely external way. For the presence or absence of such a metaphysical entity there can be no evidence. But, on the other hand, the hypothesis that such an entity is or is not present can make no difference in the scientific treatment of the concrete phenomena of animal psychology. Thus when the question is asked whether an animal discriminates the visual qualities "red" and "blue," the actual answer of the dualistic psychologist is no whit different from that of the behaviorist. "No evidence of discrimination between two stimuli on an animal's part," writes Professor Washburn (p. 53), "can do more than show us that for the animal they are different; just what the quality of the sensation resulting from each may be, whether it is identical with any sensation quality entering into our own experience, we can not say. The light rays which to us are red and blue may for an animal's consciousness also differ from each other, and yet if our experience could be exchanged for the animal's, we might find in the latter nothing like red or blue as we know them." The same might of course be said of the sensory discrimination of a fellow man, even though he were a trained introspectionist. To assert: "*A* experiences the sensation qualities red and blue," and "*A* has the capacity for discriminatory response to the corresponding wave-lengths," are not descriptions of two different facts, but merely different descriptions of one and the same fact. The belief of the dualist that there is really a difference be-

tween the two facts is a belief which, by Professor Washburn's own admission, could only be justified by an appeal to a supernatural insight. For the supposition that "if our experience could be exchanged for the animal's we might find in the latter nothing like red or blue as we know them," is essentially an appeal to a sort of knowledge which only a God might enjoy, or perhaps a mortal blessed with a magic power.

One might, if it were worth while, take up one after another the particular problems of sensory discrimination discussed by our author and show that the so-called psychological interpretation of the facts of behavior is either a pure piece of metaphysical speculation, or else merely such a classification of them as a behaviorist might make. The positive scientific conclusions reached in each case differ only in mode of formulation. Let one more instance suffice—the case of what is called by the dualist the "sense of hearing" in frogs and by the behaviorist the "auditory response" of frogs. The case has been of interest to investigators because frogs under experimental conditions have not given evidence of hearing, *i. e.*, specific response to noises. Frogs do, however, possess specialized auditory apparatus and in their native habitat appear to respond to the croaking of their fellows. Observation by Yerkes³ revealed the apparent fact that they depend almost wholly upon visual stimuli for avoidance of danger. Upon experiment it was found that while no direct specific response was given to auditory stimuli, such stimulation had a specific indirect effect in modifying reaction to other stimuli, which was particularly marked during the mating season, and which ceased when the auditory nerve was cut. On this evidence the dualist decides that probably the frog does possess a sense of hearing or have "true auditory sensations," while the behaviorist is content to ascribe merely a capacity for "limited auditory response." But unless the dualist distinguishes his conclusion as one verifiable only by supernatural insight, he must be content to equate it with that of the behaviorist.

And yet in spite of what seems to me the fatal weakness of the dualist's position, his protest against the claims of *mechanistic* behaviorism must be granted a large justification. As against the claims of a Bethe or a Loeb, the dualism of Professor Washburn is indeed inevitable. And such a formulation as theirs of the behaviorist position is apparently the only alternative to dualism considered by our author. The behavior of animals, in her view as in the view of the mechanists, is adequately describable as a series of physico-chemical processes, so that if psychological science can not

³ Cited by Professor Washburn, *op. cit.*, p. 130, and by Professor John B. Watson, *Behaviorism*, p. 387.

legitimately infer inner psychical states as the accompaniment of these processes, it must confine itself to the observation and measurement of these purely physical phenomena themselves.

Accordingly we find our author writing: "If a physiologist perfected an instrument by which he could observe the nervous process in my cortex that occurs when I am conscious of the sensation red, he would see nothing red about it; if he could watch the bodily movements that result from this stimulation, say, for instance, the slight contraction of the articulatory muscles that occurs when I say "red" to myself, he would not see them as red. *The red is in my consciousness, and no devices for observing and registering my movements will ever observe the red, though they may easily lead to the inference that it exists in my consciousness.* And precisely the same is true of all my sensations, thoughts, and feelings" (pp. 23-24; italics mine).

If certain behaviorists had not actually laid themselves open to the charge of identifying red with a form of nervous discharge, it would be incredible that such a doctrine should be deemed worthy of serious criticism. Need it be pointed out that not even mechanics confines itself to existents that can be observed? As well might a metaphysical physicist declare that since no observation of physical changes yielded a glimpse of energy, he must either deny its existence outright or else assign it to a transcendental realm. The behaviorist surely can claim the same theoretical advantages enjoyed by scientists in other fields. It is open to him to assert of the subject's red—as the physical chemist asserts of the electrical charge of the ion—that it is a function of directly observable phenomena; in this case, of discriminative responses to a set of standardized conditions. What the red may be "in itself" or for a supernatural insight with which he may imagine himself to be endowed, the psychologist has no more concern than the physicist. That such a theoretical formulation accords with the actual empirical procedure of psychology has already been argued.

What stands in the way of such a formulation is the status of introspection as a psychological method. The mechanistic behaviorist would either ignore it or consign it to the scrap-heap without further consideration; while for the dualist it is enshrined as the indispensable and sacred method of the true faith. But as a matter of fact the one rejects it and the other clings to it for the same reason. It is because both alike regard it as a sort of observation wholly different from the observation of objective phenomena engaged in by the behaviorist, an immediate vision of an inner world hidden from all but one. The mechanistic behaviorist is led by this preconception to deny the value of the empirical fruits of intro-

spection; the dualist, made confident by the attested value of the empirical fruits, entrenches himself the more obstinately in his theoretical conceptions.

But we may ask: May not behaviorism find a place for much of the empirical procedure which is labelled introspection; and may not one be convinced of the fruitfulness of introspective investigation without becoming a dualist? That is for me the critical question of psychological methodology.

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OTHER MEN'S MINDS

THE common unformulated notion that we have an intuitive knowledge of other men's minds persists in the conceptions of careful thinkers notwithstanding perfectly obvious objections to such a view.

For instance, we attribute consciousness not only to man, but also to some animals. Is this attribution based upon the same unassailable intuition? If it is, why is it that we are so uncertain in making this attribution? Why do we unhesitatingly agree that the dog and the horse have consciousness, but find it difficult to agree as to its existence, or non-existence, in connection with the life of the ant and of the bee? Is it not evident that in the case of the animal world we are dealing with modes of interpretation based upon data that are at times equivocal?

The data we employ in the case of animals is very evidently found in their behavior. Is it not clear that we also attribute minds to other men as the result of a similar interpretation? And if this is true, why should we assume that we have a very special intuitive knowledge, transcendent of experience, which leads us to attribute consciousness to other human beings than ourselves? Let us examine this subject in some detail.

In everyday life we are concerned with the consideration of what we, when we become sophisticated, call objects-in-the-outer-world. Changes in these objects under changed conditions we speak of as their behavior. The word behavior is, however, generally specially applied to changes in living animals, and especially in men-animals; and as the behavior of men-animals is most significant in our lives, it is more often noted than that of other animals.

Now each human individual realizes that he himself is a man-animal; and each of us observes his own behavior more constantly, and more carefully, than that of any other man-animal. With certain forms of this behavior of our own which are hesitant, and

deliberate as we say, we note what we call consciousness. With certain other forms, which are non-hesitant, as for instance what we call our reflex acts, we note no consciousness. This leads us to look upon consciousness as something that is in a way detached from, although closely related with, our behavior.

But we go beyond that. The two types of our own behavior just mentioned are, as we have said, noticeably different in form; they are appreciated as hesitant and non-hesitant, and this quite apart from the fact that the one type has, and the other has not, its consciousness accompaniment. In observing the behavior of other men-animals, we note activities of these same two types; but when we make such observation we find no consciousness accompaniment with either of them. The kind of behavior that is always conscious behavior when noticed in myself, is witnessed in my neighbor without any consciousness accompaniment whatever. Thus I observe myself running away from a sudden danger and feel fear: where the danger applies to my neighbor, but not to me, I observe his flight, as I observe my own, but I feel no fear.

Notwithstanding this obvious fact, we have no hesitation in assuming that the behavior of other men that is like that behavior of our own that has a consciousness accompaniment, has for them also a consciousness accompaniment, even though we ourselves do not appreciate it. I do not hesitate to say that my neighbor was afraid when he fled in a panic, although I observed nothing but his flight, and no fear at all.

Evidently we are dealing here with a pure assumption. We assume that certain forms of behavior, which in our own cases involve a consciousness accompaniment, involve the same consciousness accompaniment for other men who behave in the same way. And within certain very arbitrary limits we are accustomed to make the same assumption in regard to the behavior of other animals than men.

On what grounds do we make this assumption? The average man is likely to say, that our neighbor tells us that he has this consciousness accompaniment of the behavior we refer to. But evidently we make the assumption whether he tells us of it or not. We assume his fear when he flees even if he does not tell us of it, and would believe him to be lying if he denied having been afraid. Moreover we are quite as ready to ascribe fear to the dog that runs away from attack as we are to the fleeing man, and the dog can not tell us of his fear: we assume it because of his behavior.

This leads us to note that speech is itself a form of behavior, the nature of which is indicated to us, not through sight indeed, but

through an equally reliable sense, *viz.* that of hearing. Whether I see a man shake his head in dissent from what I am saying, or hear him say "No, no," I do not myself appreciate the conscious state which I describe as dissent; but in the one case as in the other I interpret the head movement behavior noted through the eye, and the throat movement noted through the ear. In both cases I make the same assumption that behavior which, when it occurs in me, is accompanied by a specific conscious state, is accompanied by a similar conscious state when it occurs in him.

Further evidence that we are here dealing altogether with an interpretation, based upon an assumption, is given in the fact that we not infrequently attribute to other men states of consciousness which they tell us they did not experience. We then are likely to say that we misinterpreted their gesture behavior, or the purport of their speech, in this acknowledging the fact of interpretation.

As we have seen, the "common man" generally holds, tacitly, that we have a mysterious intuitive knowledge of other men's minds, a knowledge that is transcendent of experience. And more careful thinkers find it difficult to abandon this view. Some call our attention to the fact that the clear appreciation by the adult of his own Self is bound up with his recognition of other Selves; and would thus lead us to infer that our knowledge of other minds is of the same type as our knowledge of our own. But in this they cloud the issue. The notion of my "Self" is a highly complex conception developed from simpler conscious experiences that are themselves differentiated from behavior. It is true that the clear notion of my own Self is that of an individual in a group, and that the other members of the group are appreciated to be other Selves; but that merely throws us back to our original question, *viz.*, how do we come to believe that other individual men have consciousnesses, and the Selves that develop therein. In the very beginning of social relations each individual must have found implicit in his experience the distinction between the observed behavior of his own body *with* its added consciousness attribute, and the observed like behavior of other men *without* this added consciousness attribute; and it is evident that if a process of interpretation is explicit when we think clearly of the behavior and of the consciousness of other men, it probably, to say the least, has been implicit from the very beginning. The problem is thus merely thrown back in time.

We are thus led to ask what basis we have, if any, for the assumption we are considering. It seems to me that we have a very firm one in the very nature of consciousness as it is divulged to us

as the result of our psychological studies. These have taught us that when two characteristics of a frequently observed object are separable they become so connected by association, as we call it, that when one of the characteristics is given in a new object, the other of the two characteristics of the frequently observed object is likely to be reinstated as an image, and is thus naturally looked upon as an attribute of the object later observed. Furthermore the characteristics of the more frequently observed one of the two objects are the ones that are most likely to be attributed to the less frequently observed, but similar, of the two objects. Thus, for example, we see a carefully shaded round piece of yellow paper, and at once think "how exactly it looks like an orange." But, were round shaded pieces of yellow paper more common in our experience than oranges, we should say, when we saw an orange, "how much it looks like a shaded round piece of yellow paper."

In the very earliest observations of babyhood, the behavior of the baby's own body and of other person's bodies will naturally group themselves together. The baby's own hand movement, for instance, and the hand movements of the mother and nurse will appear to the baby to be all of a kind. Now the baby's own behavior, say its hand movements, is more constantly brought to its attention than the like behavior, again say the hand movements, of mother and nurse. Presently it finds that in connection with its own frequently observed hand movements it notes a conscious attribute. Hence when the baby next notes the hand movements of mother or nurse, the consciousness characteristic, so often observed in connection with its own most familiar hand movements, is reinstated as an image, and is attached by mere association to the less often, and less closely observed, hand movements of mother or nurse.

The process thus described in terms of hand movements would apply to all of the growing child's observation of behavior; and thus from the very beginnings of its life there would be established the habit of interpretation of the behavior of other persons in terms of consciousness. Indeed this habit would naturally tend to extend itself to all behavior of outer world objects, and thus we often find the young child attributing a conscious life to inanimate objects, a manner of thought that persists to a wide extent in adult life among childlike savages. But the experience of life must soon lead the child to the discrimination of animate from inanimate objects; and as this experience is extended he must find the interpretation referred to so effective in relation to the animate, and so ineffective in relation to the inanimate, that he will soon come to limit his interpretations in the main to apply to animate life. And this

manner of thought will be fostered as the child grows older by his appreciation of the fact that his conduct based upon this mode of interpretation is found to yield practical, and desired, results.

It would thus appear that the attribution of a consciousness characteristic to other men, connected with their behavior, is not due to any knowledge that transcends experience, but is due to a quite natural interpretation of the part of that experience which relates to the behavior of others, in terms of the much more frequently observed part of that experience which relates to ourselves.

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CONSCIOUS BEHAVIOR

MANY references in recent issues of this JOURNAL give the impression that when the behaviorist denies that consciousness must be regarded as an independent entity, this is equivalent to relinquishing the study of part of the subject-matter of traditional psychology. Some philosophers and psychologists seem to regard the behaviorists as animal psychologists who have availed themselves of the expedient of simply ignoring what they do not understand and then regarding this high-handed brushing aside of difficult problems as equivalent to a solution of these problems. This conception so manifestly underlies Mr. H. R. Marshall's¹ objection to behaviorism that an attempt may not be inappropriate to indicate how the most baffling problems of human conduct may be investigated without utilizing the subjective methods of traditional psychology. The behaviorist merely maintains that the biological methods used in natural science can also be applied to those phenomena which have been designated as conscious or mental.

The immediate epistemological problem is to demonstrate that the concept of consciousness may be eliminated from the descriptions and explanations of human conduct and yet include *all* behavior, from the simplest types of animal behavior to the most complex human adjustments. The issue is clearly stated in Mr. Marshall's article. After differentiating animal behavior into the two types of reflex or instinctive on the one hand, and highly complex behavior that is hesitant, on the other, he continues: "The biologist studies both of these types of behavior in all forms of animal life; in the higher animals and in man, and in both cases quite objectively. . . .

"But the biological student is himself a man, and as he observes his own activities, still as part of the objective world, he discovers

¹ "Behavior." This JOURNAL, Vol. XV., No. 10, pp. 258-261.

in them these same two types of behavior. When in regard to his own body he studies that highly complex form of behavior that is hesitant and not immediate, he finds all that he discovers in connection with his studies of this type of behavior in other animals; but in very many cases *he discovers also something more*. He finds not only behavior of this special type but '*conscious behavior*.'

"In this observation of his own behavior the student then has not only the characteristics that yield the special sciences of neurology and biochemistry, for instance, but a quite different characteristic that yields the special science of the conscious; and this is what has always been designated as psychology."

Considered merely as a statement of fact it is not likely that any behaviorist denies anything contained in the preceding quotation. However, it is open for discussion whether the differentiation into *conscious* and (by implication) *unconscious* behavior can not be displaced by a classification and method of investigation having greater heuristic possibilities, without limiting the scope of the investigation.

What is the *something more* that the biologist finds when he observes his own activities?

All Subjective Phenomena is Expressed in Action.—At the outset it is necessary to agree that whatever the character of this something more may be, it must be expressed in some sort of a reaction; a written account, oral description, gesture, facial expression, pantomime or any other conventional form of representation.² Unless the something more is expressed in action of some sort it can not become the data of science or of empirical investigation. If it is maintained that consciousness is something more than a verbal report this something more must be activity of some form; changes in respiration, vaso-motor changes, glandular or visceral secretions, but since these changes are usually expressed in verbal descriptions we shall regard the speech reaction as furnishing adequate data for the discussion in this article.

To deny that consciousness must be expressed in order to be available for science places it beyond the reach of scientific investigation and within the realm of poetry or literature.

If it is granted that consciousness must be *expressed* as neuromuscular phenomena, the problem becomes that of determining the neural characteristics of those expressions or activities of which consciousness is predicated.

Delimitation of the Discussion.—To simplify the analysis of these characteristics we assume a concrete situation in which there is an

² In the interest of simplicity in presentation the single phrase "speech reaction" will be used to designate any of these forms of expression.

observer who has reported his own movements and also introspections on his "mental states or processes" in the accepted psychological manner. We shall refer to this individual as the *self observer*. In addition he is supposed to be under the observation of another person whom we shall call the *outside observer*. It is further supposed that each observer has prepared a report describing that phase of the concrete situation in which he participated. A comparison of the two reports should reveal the characteristics of what is traditionally known as conscious behavior, in so far as it is a part of our concrete situation.

Objective Behavior.—An inspection of the observers' reports reveals many reactions that are similar. For instance in the self observer's report is found, "My hand moved before my eyes," while in the outside observer's report is found, "His hand moved before his eyes." Both of these items represent coordinated contractions of the muscles used in writing. The light reflected from the hand of the self observer acts upon his own eyes and also upon those of the outside observer. A *single* stimulus source thus results in *two* sets of neural processes, each leading to independent but similar contractions of the muscles of the writing hand of each observer, in the coordinated manner which we describe as *writing*, the character of which (choice of words, grammatical structure, *etc.*) will depend upon what language habits have been acquired. All of this may be regarded as solely neural or biological in character. It is of no scientific advantage to claim that these speech reactions were accompanied by mental processes, since if no reactions had been made, no mental states could ever have been inferred. Objective behavior then can be regarded as that type of behavior in which the sensorimotor conditions are similar (not necessarily identical) for all those individuals who may be regarded as participating in the observation.

Sensory Subjective Behavior.—The self observer in addition to reporting, "My hand moved before my eyes," may also report, "I had kinesthetic sensations localized in the muscles of the forearm and shoulders; some kind of sensations which seemed to be localized in the eyes as I tried to follow the movement; strain sensations in the back and neck." The number of such observations, traditionally designated as subjective or introspective, depends largely upon the complexity of the reaction, its duration, and upon skill in discriminating obscure and weak stimuli.

Regarding these reactions as due to the stimulation of kinesthetic sense organs located in the self observer's arms, shoulder, back and eye muscles, it is clear that he has a source of stimulation not available to the outside observer from whom we should not expect a simi-

lar reaction since no corresponding sense organs in his own body are being stimulated.

Mr. Marshall supports his contention that consciousness must be regarded as a factor in behavior by referring to the practise of the physician, "who constantly treats of the conscious states of his patients as symptomatic of special forms of organic behavior." This only means that the patient may react to obscure stimuli within his own body which, of course, can not act upon the sense organs of the physician. In other words the physician's reactions are limited mainly to visual and auditory impressions while the patient may have additional organic, kinesthetic and cutaneous impressions which do not act upon the physician's sensorium.

The reason the physician asks the patient to react to the obscure and personal stimuli is because no better way of making the diagnosis is available. Where it is possible to substitute the physician's sense organs for those of the patient it is invariably done. To illustrate: The dentist has two ways of determining whether the root of a tooth is abscessed; (1) by tapping it in various ways, pressing on the gums and asking the patient how it "feels." The "feeling" of the patient is of course due to the stimulation of the various pain and tactual sense organs which are stimulated by the tapping or pressing. This is the subjective method of diagnosis. The other method, (2) is to take an X-ray photograph of the teeth and gums. In this method the dentist substitutes his own sense organs (vision) for the pain and tactual receptors of the patient. In doubtful cases both methods are used, but where the two methods give contradictory results it is the X-ray which is regarded as authoritative, not the subjective states of the patient.

It must be remembered that the terms subjective and objective are *social* distinctions. A single individual's reactions are all of one sort. Either all subjective, or all objective, or neither, depending upon what metaphysical point of view is taken. From the anatomical and physiological standpoints this distinction only designates the empirical fact that we may react to stimuli arising within our own bodies or to stimuli arising outside of the body. Those stimuli arising within our own bodies do not act on corresponding sense organs in *other persons*, whereas the stimuli arising outside the body may act on corresponding sense organs in any number of individuals. It is to be expected that these marked differences in stimulus conditions will result in marked differences in the reactions. Subjective and objective then, from the biological standpoint are merely terms that indirectly designate this difference in the termini of our reaction mechanisms.

Imaginal Subjective Behavior.—In addition to reacting to sensory stimulations within his own body the self observer may also report what is known as imagery, affective states, cognitive conditions, *etc.*, as for instance, “The movement of my hand reminds me of a semaphore action which I saw in a railway station at the end of an unpleasant trip.” The immediate sensory factors in this type of observation are relatively insignificant as compared with the central neural interconnections and the extent to which the nervous system has been modified by past function. The outside observer’s report may also show this effect as when he reports, “The movement of the arm was made in a very characteristic fashion; my grandfather frequently made such a movement when brushing a fly from his nose; I wonder why I happened to think of it at this time?” The two reports do not agree because the neural processes pass over two different nervous systems each one of which has been independently modified by earlier function.

When neural processes which do not correspond in their sensorimotor configuration for both observers, are strong enough to result in motor contradictions such as those assumed in this particular situation, we may speak of introspection, the characteristic of which is the use in a professional manner of such terms as, sensations, images, affections, cognition, perception, memory, *etc.*, in our speech reactions. These terms may be used to describe our actions in a very consistent manner without referring at all to neurology so long as we wish merely to classify the reactions. When however we wish to determine the genesis of a particular mode of behavior, we are obliged to study the antecedent neural conditions.

Imaginal Subjective Incipient Behavior.—In our illustration we have assumed that the observers have actually reacted (written out their imagery). This assumes that the neural processes which get their present configuration from previous functioning are strong enough to result in the motor contractions necessary to write out a report. We should expect that frequently such processes are not strong enough to result in reactions which can be detected and inspected by an outside observer, but from other observations it has been found that actions very often do result, especially when we consider subvocal reactions.

This type of neural activity may be designated as *thinking* and in this sense thinking is only neuro-muscular activity which gets its character from past neural function but at the moment is not strong enough to result in speech reactions. It may become strong enough at any moment, as when an observer begins to “talk to himself” or “thinks out loud.” The sense organs that are stimulated may be

obscure kinesthetic or organic receptors in the body of the self observer, or a part of the neural flux directly involved in the overt reaction of the moment, may take its course to those motor points which actually did contract at some previous time.

When reacting to any situation the spread of the neural flux over the nervous system is always wider than necessary to react in a socially adequate manner. Supplementary speech reactions, respiratory and vaso-motor changes of no significance for the social adequacy of a reaction may and usually do occur. Under ordinary conditions we ignore them because the character of these supplementary reactions varies so much from individual to individual and for the same individual at different times that uniformity can scarcely be said to exist.

The spontaneous or conscious character of our thought processes is an illusion due to the fact that the actual neural conditions involved are obscure and can not be definitely referred to the immediate sensori-motor conditions.

Conscious Behavior.—The term *conscious* characterising actions is regarded by the behaviorist as merely a vague and ambiguous expression referring to undefined combinations of objective, sensory subjective, imaginal subjective, and imaginal subjective incipient behavior.³ In another article⁴ the writer has attempted to give the term a definite meaning by restricting its use to those observations in which the terminology of traditional psychology is used in a descriptive sense.

The behaviorist regards all behavior as neuro-muscular action whether these actions are the ones by which bodily adjustments are made or whether they consist of the complex speech reactions whose final result is the statement of a natural law or the publication of a treatise on metaphysics. The problem of consciousness for the behaviorists is merely that of agreeing among themselves as to what types of action it will be most convenient to designate by this term. So far they have agreed that the most convenient thing is not to use the term at all. If those who insist upon the heuristic value of subjective descriptions or upon the existential character of consciousness aside from its neuro-muscular expressions will indicate clearly what *they* mean by the term consciousness, perhaps the behaviorist will

³ This classification is to be regarded as representing a transition stage between the terminology of traditional psychology and that of behaviorism. It has value only as a concise abbreviation of the subject-matter discussed in this article. The writer is aware that its dualistic character will not make it acceptable either for traditional psychologists or for the behaviorists.

⁴ "Relation between Functional and Behavior Psychology," *Psychol. Rev.*, Vol. XXV., September, 1917, pp. 360-366.

then be able to place it somewhere within his own categories. It is very certain, however, that defining consciousness as the *something more* that accompanies certain types of action is hardly enough to begin negotiations.

Critics of behaviorism do not recognize clearly enough that the term consciousness varies in its meaning with almost every person who uses it. There is no generally accepted definition or description, and the fact that psychologists and philosophers have been unable to reach an agreement is one of the conditions which precipitated behaviorism. All human conduct, aspirations, hopes and endeavors, express themselves in actions of some kind or other. Whatever the specific character of these actions may be they can not exceed the limits set by (1) the type of nervous system that has been inherited; (2) the way in which past neural function has modified it; and (3) the character of the stimuli which are immediately effective. Since these factors are never the same for any two individuals it may be useful to designate those reactions which express this difference as consciousness or mentality. However, it is the traditional psychologist who should formulate the problem of consciousness or mentality—not the behaviorist. The success of behavior methods will not depend on how they react to the problem of consciousness; they succeed or fail according as they do or do not further the general welfare of society.

Epistemologically the behaviorist supports the monistic principle that all phenomena can be reduced to action. He regards the interpolation of some hypothetical conscious principles as unnecessary.

The Illusory Spontaneity of the Speech Reaction.—Much confusion arises because the speech reaction is regarded as falling outside the laws of neuro-muscular activity that govern bodily movements (arms, legs, head, *etc.*). Speech is regarded as something spontaneous, that while we may recognize bodily reactions as neuro-muscular in character our speech is free; we can say what we choose, argue either for or against a proposition if we wish, or remain silent when this suits our fancy. The behaviorist regards speech just as much a neuro-muscular adaptation to an environment and just as inevitable as the withdrawal of the finger from a hot stove. The significant thing about the speech reaction is that it may be either the adequate *reaction* to a situation, or it may be the adequate *stimulus* for either another speech reaction or some bodily reaction.⁵ Speech may thus function either as a stimulus or as a reaction.

Another reason for differentiating speech from other forms of ac-

⁵ This dual character of the speech mechanism has been developed by Max. F. Meyer, *Fundamental Laws of Human Behavior*, 1911, pp. 211-226.

tivity is that its protective or nutritive function is indirect. The word "potato" does not have the food value of the real potato, nor will the mere pronunciation of the words, "Look out" prevent the falling brick from striking the pedestrian. Furthermore, the process of learning to make the proper speech reactions in our professional and social activities covers such a long period of time that the neural conditions involved in the learning are gradually changing. This tends to obscure the source of our speech reactions and as a consequence we do not think of them as sensori-motor adjustments to our environment of the same general type as those actions which contribute more obviously toward nutrition or protection.

*Illustration of the Social Significance of the Speech Reactions.*⁶—

It is usually maintained that the high cost of living is due to the war. In investigating the situation it was found that the population of the United States during the ten years preceding the war increased twenty per cent., while food production increased only ten per cent. As a result of this investigation the following verbal statement was formulated: "The high cost of food is not entirely due to the war but is partly due to the fact that the population is increasing more rapidly than the food supply." This statement may be regarded as the adequate speech *reaction* of the investigator to the visual stimuli of certain records and statistics acting on his nervous system which has been variously and specifically modified by past stimulation and function. To determine just how all these factors interact to produce the speech reaction which is quoted is of course a difficult task, but a strictly empirical one, the analysis of which must consider the inheritance, training and life conditions of the investigator.

The reaction, however, may also be regarded as a *stimulus* which, acting on the eyes of some responsible person in the Department of Agriculture, leads to another speech reaction in the form of verbal orders from the Department to the various experiment stations and field representatives, requesting that every energy be expended to increase food production at least ten per cent. Suppose that all this comes to pass and that we have an actual increase in the food supply and a reduction in the cost of food. We can then say that the original speech reaction is very valuable and that it should be conserved for future needs. It may then become incorporated in our text-books of sociology and agriculture. The value of this particular speech reaction lies solely in the fact that it may be used as a stimulus under the proper conditions, and when so used the ultimate result is an increased food supply.

⁶ The illustration here used is not original with the writer. It has, however, been so "manifestly adapted" to the present needs that it is difficult to assign proper credit.

Such a speech reaction is usually called a law, theory, hypothesis, working plan, and by reason of the fact that it is an effective stimulus to produce socially valuable actions on the part of individuals or communities it is incorporated in some phase of our educational system. The formulation of the original speech reaction is, however, a neuro-muscular phenomenon of the vocal mechanism or writing hand just as much as the more obvious skilled activity of designing or perfecting scientific apparatus.

To say that the speech reaction is the result of reasoning, logic, imagination, is merely to classify it according to properties which were at one time regarded as independent entities (faculty of reasoning, intelligence, imagination). As the scientific inadequacy of the faculty concept was demonstrated the number of faculties decreased until now they are supposed to have disappeared. The classifications, however, still remain and of course may still be used to classify our reactions, but it must be remembered that the original justification for their development (the faculty concept) no longer exists. The types of classification used in successful scientific practise to-day are those in which the principles of evolution, phylogeny, and ontogeny are predominant. Faculties or entities do not have an evolutionary, phylogenetic or ontogenic history and this fact immediately places them beyond the methods of natural science. At any rate the classification of our reactions according to the methods of traditional psychology leaves us in ignorance of the antecedent neural or biological conditions necessary to formulate other or still more valuable speech reactions.

To ask the investigator who formulated the valuable law which is quoted, to introspect on the conscious states which seemed to him to have some relation to the law, merely brings out how he might have reacted in addition to formulating the law. That is, in addition to reacting to a complex statistical situation by forming the statement, "To maintain existing economic and social conditions, the ratio between the percentage increase in population and the percentage increase in food supply must approach unity," the investigator might also have reacted by saying, "I have a visual image of a sheaf of wheat; an auditory image of the words, ten over ten equals one; a visual image of twelve people standing around a table upon which only eleven places are laid; many kinesthetic and organic sensations; fragmentary imagery of the syllogism, 'All men are mortal, Socrates is a man, Socrates is mortal.' " These supplementary speech reactions tell us something no doubt, but the essential conditions leading to the formulation of a valuable speech reaction are so much a matter of inheritance and training, are so much a function of the whole life

history of the individual, that the few supplementary reactions which can be induced on the occasion of its occurrence, interfere with its formulation rather than throw light upon its origin.

The behaviorist maintains that since a valuable scientific law, discovery or invention is sensori-motor phenomena, better laws, greater discoveries may be expected from the study of the biological evolution of the sensori-motor phenomena than from a study of the supplementary phenomena occurring with it.

SUMMARY

The behaviorists maintain that the natural science methods used in biology are also adequate to investigate the phenomena that traditional psychology designates as conscious or subjective.

If subjective phenomena is to be investigated it must be expressed in neuro-muscular functions of some kind. To maintain that consciousness is something more than neuro-muscular phenomena can not be demonstrated and hence is beyond the technique of current scientific methods.

Objective behavior is that type of behavior in which the neural conditions are such that the same stimulus source acts upon corresponding sense organs for all the individuals participating in the observation. Similarity in the reactions is the test of objective behavior.

Sensory subjective behavior is that type of behavior in which the self observer is reacting to a source of stimulation (usually organic or kinesthetic) located in his own body and which stimuli can not act on corresponding sense organs in the body of the outside observer.

Imaginal subjective behavior expresses the effect of neural modifications which are due to previous functioning of the nervous system.

Imaginal subjective incipient behavior (thinking) derives its character from previous neural functioning, but at the moment under consideration the neural flux is not strong enough to result in speech reactions.

Conscious behavior may be used as a term to designate the differences between the reactions of individuals. In the absence of any considerable uniformity among traditional psychologists as to the meaning of the term consciousness, the behaviorist is justified in delaying its inclusion into his own categories until a greater degree of agreement has been established.

Much of the objection to behaviorism is due to the implicit assumption that speech reactions are spontaneous activities, instead of neuro-muscular adjustments indirectly contributing to individ-

ual survival in the same manner as nutritive or protective reactions.

The speech reactions which are valuable for society are those which may function as effective stimuli in the further development of the physical and social resources of the community.

Since speech reactions may be regarded as sensori-motor phenomena, the direct study of their antecedent neural and general biological conditions is of greater scientific advantage than the study of concomitant or supplementary (conscious) phenomena giving only fragmentary and highly variable indices of the essential antecedents.

The traditional psychological classifications still convey at least an implicit faculty reference to many psychologists and philosophers. So difficult is it to disregard this assumption and the "specially created" attitude toward complex human behavior, that some psychologists (the behaviorists) prefer to substitute natural science concepts in which the principles of evolution, phylogeny and ontogeny are explicitly regarded as underlying their investigations.

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REVIEWS AND ABSTRACTS OF LITERATURE

The Picture Completion Test. RUDOLF PINTNER and MARGARET M. ANDERSON. Baltimore: Warwick and York. 1917. Pp. 101.

In this monograph the authors present a standardization of Healy's Pictorial Completion Test, which was introduced in the *Psychological Review* in 1914. Since that date the test has become familiar in psychological clinics. It was devised with the intention of making available a test which would involve the Ebbinghaus Completion Method, and would at the same time eliminate the factor of language. It consists of a picture, significant missing elements of which are to be supplied by choice among many alternatives provided.

Hitherto the test could be given only for the purpose of gaining a general idea of the subject's mentality, and, as is the case with all unstandardized or partially standardized tests, the results were of problematical value. The authors of the present work have thus made a very useful contribution to the equipment of the psychological clinic, by determining and presenting norms of performance for every age, from five years to adult years, inclusive. In the absence of any statement to the contrary, it is probably permissible to assume that age is counted from birthday to birthday, a five-year-old, for example, being counted as five years old from his fifth birthday to

his sixth birthday, instead of being counted as five years old during the twelve months nearest to his fifth birthday, as is sometimes done in standardization. A definite statement from the authors would have served to clarify this doubtful point.

The medians and percentiles, in terms of which the norms are calculated, are based on a total of fifteen hundred and twenty cases, but the number of subjects at age five is very small. As in all standardizations which are of value, the point of view is behavioristic throughout, no *a priori* judgments being made by the investigators as to which moves should be considered correct, and which incorrect. The performance is finally scored in terms of the kinds of moves made, the factor of time being neglected. As a result of the research, the psychologist is provided with norms which may be used as a year scale, a point scale, or a percentile scale.

The authors are able to report that this test is excellently adapted for children at all ages, and to some extent for adults; that there are no sex differences in performance; that, as would be expected from previously published results of general intelligence tests, children from good or medium environment are better performers than are children from poor environment; and that accelerated pupils do better than retarded pupils. All of these results tend to give confidence in the validity of the test. The correlation of the performance at each age with that at every other age shows the relative difficulty of the various moves to be approximately the same for children of all ages.

It is desirable that many more tests may be thus adequately standardized in the near future. Psychologists have been diligent in devising tests, rather than in standardizing them. The clinician, however, calls not for ingenious and interesting devices, but for instruments of precision. It is to be hoped that Professor Pintner and his collaborators may continue to add to their already extensive service in this field.

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JOURNALS AND NEW BOOKS

JOURNAL OF EDUCATIONAL PSYCHOLOGY. January 1918.
Some Mathematical Aspects of the Binet-Simon Tests (pp. 1-12): FRANCIS N. MAXFIELD. - The result of the child's performance is the score and it must be interpreted. An analysis of the results of several workers is given and a list of references appended. *The Measurement of Intelligence: Six Hundred and Fifty-three Children Examined by the Binet and Porteus Tests* (pp. 13-31): S. D. PORTEUS.

—Several conclusions are drawn from the results with normal and feeble-minded children. The relation between the two tests is fairly constant: about 70 per cent. test within one year of the Binet age. *Freshman Tests at the State University of Iowa* (pp. 32–46): IRVING KING and JAMES McCRORY.—Two hundred and seventy-six women and 268 men in the university were tested freshmen year. Eight tests were used and they show fairly good correlation with academic work the first semester. The median performances of the boys slightly excels that of the girls in six of the eight tests. Sex differences in mental functionings are negligible as far as these mental tests are concerned. *Editorial. Notes and News. Publications received.*

Loeb, Jacques. *Forced Movements, Tropisms, and Animal Conduct.* Philadelphia and London: J. B. Lippincott Company. 1918. Pp. 209. \$2.50.

Proceedings of the Aristotelian Society. New Series, Vol. XVIII. London: Williams and Norgate. 1918. Pp. iv + 655. 20s. net.

NOTES AND NEWS

THE following is the preliminary announcement of the plan for this year's meeting of the American Philosophical Association:

"The eighteenth annual meeting of the American Philosophical Association will be held at Cambridge, Mass., on December 27 and 28, in acceptance of the invitation of the president and of the department of philosophy of Harvard University. The sessions will begin on Friday morning and will continue through Saturday afternoon.

"In order that there may be a full attendance at the first session of the meeting, it is suggested that members plan to arrive on Thursday in time for informal meeting in the evening.

"In accordance with the plan adopted at the last meeting of the association, the executive committee has chosen for the main topic of this year's meeting the subject "Vitalism and Mechanism," and has appointed as the leader of the discussion Professor R. F. A. Hoernlé, of Harvard University, who in turn has chosen Professors L. J. Henderson, of Harvard University, H. S. Jennings, of Johns Hopkins University, W. T. Marvin, of Rutgers College, and H. C. Warren, of Princeton University. Abstracts of the leaders' papers will be found in the JOURNAL OF PHILOSOPHY, PSYCHOLOGY AND SCIENTIFIC METHODS, Vol. XV., No. 17 (August 15, 1918), and a bibliography of the topic in the same JOURNAL, Vol. XV., No. 20 (September 26, 1918). The full papers will be found in the forthcoming (November) number of *The Philosophical Review*.

"Members of the association are invited to contribute papers to the discussion. There will also be an opportunity, through two or more sessions, for the presentation of papers on other problems of philosophical interest. Papers will be limited to twenty minutes, unless extended by special arrangement. Members are requested to send to the Acting Secretary, not later than November 15, the titles, and, if possible, the abstracts, of papers they propose to read. The final program will be sent out early in December. Abstracts for publication in the *Proceedings* are limited to four hundred words, and must be in the hands of the Acting Secretary by December 28.

"The Executive Committee is directed to invite members of the association to suggest topics for the meeting of 1919. Such topics should be sent to the Acting Secretary as soon as possible, in order that careful consideration may be given to plans for the ensuing year.

"Membership blanks will be furnished on request, and should be so filled out as to give full information regarding the candidates' qualifications. It is requested that nominations for membership be made as early as possible, and not later, in any case, than December 1.

"Radcliffe College has kindly placed at the disposal of the ladies of the association one of its dormitories, where lodging and breakfast may be had for \$1.50 per day. Gentlemen will be accommodated, as far as possible, at the Colonial Club, Cambridge, and at the Harvard Club, Boston. The rates for rooms at the Colonial Club will be \$2.00, and at the Harvard Club, \$2.50 and \$3.00 per day. The headquarters of the association will be Emerson Hall, and the Colonial Club near by. All requests for reservations should be addressed to Professor R. F. A. Hoernlé, Emerson Hall, Harvard University, Cambridge, and should reach him not later than December 10.

"*In view of the unusual care expended this year upon the discussion program, and in view of the fact that several of the speakers are guests of the association, it is warmly urged that members make a special effort to attend, and to make the meeting as fruitful as possible of results.*

(Signed) E. C. WILM,
Acting Secretary."

688 BOYLSTON STREET,
BOSTON, MASS.,
October 15, 1918.

M. DE WULF, author of the excellent history of medieval philosophy, announces in the *Revue de Metaphysique et de Morale* (May-June) that he will publish a work in one volume to be called *Civilization et Philosophie au moyen age*, which will supplement the work on medieval philosophy. The substance of the new volume is the material of a course given at the University of Poitiers, and of which the introductory address is printed in the above mentioned number of the *Revue*.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE LOGIC AND RHETORIC OF CONSTITUTIONAL LAW¹

MY title is a theft from Charles A. Beard's brilliant essay in the *New Republic* on "Political Science in the Crucible." And what I shall say about it is doubtless the fruit of similar larceny from other thinkers. For most of us who labor in the vineyard of learning originate but little. And the few who originate seldom read papers before The American Political Science Association. So I shall not profess to be bringing before you thoughts that have sprung full armed from my own mind. In so far as I can trace their background I acknowledge indebtedness to Roscoe Pound and to John Dewey. And yet I must acquit them of any responsibility for my particular contentions; for the application is my own, and not only may power be lost in its transmission, but, even worse, it may be misdirected.

In the opening sentence of the essay referred to, Beard says that "political science in the United States has always been under bondage to the lawyers." This he finds due mainly "to the nature of our system of government, which places constitutionality above all other earthly considerations in the discussion of public measures." "The elucidation of our national issues," he continues, "has called for the lawyer's technology and rhetoric, although they have been at bottom matters of politics and public policy." And he concludes his opening paragraph with the sentence: "The hand is subdued to the dye in which it works, so the mind of men who have speculated on political science in America is subdued to the logic and rhetoric of constitutional law."

I

This prompts me to ask: What is the logic and rhetoric of constitutional law? I shall not trouble much about the rhetoric. Like the world, it is too much with us. Vague phrases which admit

¹ A paper read before the American Political Science Association at its meeting in Philadelphia, December, 1917. In preparing the paper for publication some slight changes have been made.

of various interpretations, which kindle the emotions, are the greenbacks of our common speech. If we doubt the value behind them, we ask for the gold of the specific and the concrete. Or else all too often we wager against them currency of similar tenor, but backed by other values which we more approve. Beard and the *New York Times* both give us rhetoric. My preference for the rhetoric of Beard is due, not to a literary judgment, but to a confidence in the values that lie behind the felicitous phrase of Beard and to a suspicion that the values behind the editorial oratory of the *Times* have sadly depreciated since the days of Herbert Spencer.

When Beard writes of "the ambulance of capitalism gathering up the wrecks of industrial anarchy," of Sociology wandering "around in the dim vastness of classified emotions," of Political Science "hanging in the vacuum of closed legal speculation," he writes rhetoric, and good rhetoric. But the rhetoric will take the place of specie only for those who trust what lies behind. And what is true of the rhetoric of Beard is true of the rhetoric of constitutional law. If we can personify such an agglomeration as our American constitutional law, and then attribute to it the vice of rhetoric, we must still be lenient: for it is a vice to which we all are prone. Even international affairs succumb to the spell of rhetorical treatment. Man is a rhetorical animal. But his rhetoric he uses to market his notions, not to make them. So it is the factory and not the sales-room that I invite you to explore. It is to the logic behind the rhetoric of constitutional law that I wish to direct your attention.

II

I may give a clue to my thesis by reporting an incident in a debate in the United States Senate. Senator Spooner of Wisconsin had been citing Supreme Court decisions to his purpose. When Senator Tillman of South Carolina was recognized, he complained: "I am tired of hearing what the Supreme Court says. What I want to get at is the common sense of the matter." To which Senator Spooner rejoined: "I too am seeking the common sense of the matter. But, as for me, I prefer the common sense of the Supreme Court of the United States to that of the Senator from South Carolina."

This in a nutshell is my thesis: the logic of constitutional law is the common sense of the Supreme Court of the United States. That common sense may agree with ours, or it may not. In some instances we might prefer Senator Tillman's. This much of comfort we have, at any rate, that, whenever we come upon a decision which is particularly displeasing, we usually find that there is a minority of

the court who feel as badly about it as we do. The variety of common sense which is offered by the divergent opinions of different judges is such that no intellectual palate need go without something to its taste.

This division of opinion among the judges of the Supreme Court finds its counterpart in the differences among those who debate in other forums. If the eight judges who sat in *Stettler v. Oregon* were evenly paired on the minimum wage, so were Alvin Johnson and Professor Taussig. Mr. Justice Pitney's views of the Adamson Law were anticipated by three of my friends—a retired dentist, a Professor of English and an instructor in chemistry. They were shocked when I told them that long ago the Supreme Court in *Munn v. Illinois* had decided that the legislature could limit the profits of those who conduct what we call a public utility. It comforted them a little to learn that, if the Adamson Law raised the expenses of the railroads so that their rates did not yield them what the court thought a fair return on their investment, the rates could be raised until the net earnings were reasonably remunerative. Yet to these lay friends of mine the idea that the owner of any kind of a business could not charge what he pleased and pay only such wages as he pleased was novel and abhorrent. And so it is with the other questions that separate the judges of our high tribunal into the familiar camps that shelter five in one and four in the other. Take a sampling from the men you talk with at the club and in the Pullman and you will find that their untrained common sense leads them to the same diverse conclusions to which the more highly developed instrument leads the judges.

We often hear that the lawyers have governed America. But it is equally true that America has governed the lawyers. The ideas that lawyers have expressed in the legislature, at the bar and on the bench have not sprung from any mysterious source whose hiding place is revealed only to those who read books in sheep bindings. The doctrine of individualism was not invented by judges. Your Southern school boy is as familiar with the dangers of allowing the federal government to encroach on the reserved powers of the states, as are the judges who annulled the federal Child Labor Law. The "mysteries of constitutional law," which Beard tells us are invoked when other comforts fail, do not seem to me mysteries at all. The rhetoric is not unlike the rhetoric we all use. And the logic behind the rhetoric is the logic with which you and I debate our disagreements.

Immortal principles fly their standards in judicial opinions, yes. But so they do in the common every-day talk of the butcher and banker, of the suffragist and the anti-suffragist, the pacifist and the

militarist, the Socialist and the individualist. Arguments from expediency to reinforce the immortal principles will be found in judicial opinions as they are heard on the hustings. And there are judges who find no immortal principles, who conceive their task to be that of making wise adjustments amid competing considerations. "Constitutional law," says Mr. Justice Holmes, "like other mortal contrivances, has to take some chances." "Difference of degree," observes the same jurist, "is one of the distinctions by which the right of the legislature to exercise the police power is determined." And no one has put better than he the point of view that rejects universals and the absolute. "All rights," he tells us, "tend to declare themselves absolute to their logical extreme. Yet all in fact are limited by the neighborhood of principles of policy which are other than those on which the particular right is founded, and which become strong enough to hold their own when a certain point is reached."

Many men of many minds have sat on our Supreme Bench as they have read papers at meetings of the American Political Science Association or lectured in college class-rooms. Judges argue from undisclosed assumptions, as you and I argue from undisclosed assumptions. Judges seek their premises from facts, as you and I strive to do. Judges have preferences for social policies, as you and I. They form their judgments after the varying fashions in which you and I form ours. They have hands, organs, dimensions, senses, affections, passions. They are warmed and cooled by the same winter and summer and by the same ideas as a layman is. If there is a mystery to constitutional law, it is the mystery of the commonplace and the obvious, the mystery of the other mortal contrivances that have to take some chances, that have to be worked by mortal men. The logic behind the rhetoric is the logic of finding out what words mean, what purpose the words were meant to serve. And where the words of the Constitution offer no guide, the logic is that of finding out what is most expedient.

III

It will be apparent how much of our constitutional law is merely getting at the common sense of the matter when we consider how few of the questions of constitutional law are answered by any specific language in the Constitution. When the language is really specific, questions seldom arise. The majority of current decisions have to deal with the clause forbidding the states to deprive any one of life, liberty or property without due process of law, and with the clause granting to Congress the power to regulate commerce among

the several states. And most of the questions under the latter clause concern, not the power of Congress but the power of the states, about which the Constitution is silent. "Due process of law," though it occurs twice in the Constitution, is left without definition. Important questions respecting the taxing powers of the states and of the United States arise, not under any language of the Constitution, but because the Constitution ordains a federal system of government, and thereby makes possible a clash between state and national interests.

In interpreting the Constitution the courts have the task of applying the general to the particular. Our constitutional clauses are couched in such extremely general language that there is something fictitious in calling the work of the courts a work of interpretation. It is but to a slight extent a literary task. It is to a very large extent the task of weighing competing practical considerations and forming a practical judgment. That this is true in decisions involving the police power is made clear by the judicial recognition of the fact that the question in issue is whether the unwelcome deprivation of liberty or property is reasonable or arbitrary. The judgment of the courts is none the less a practical one because it may be influenced by a general preference for leaving folks unfettered by law, or by an opposing preference for imposing social standards. Those preferences are not unrelated to what is thought to be most desirable in practise.

In determining the scope of state power which touches interstate commerce, the opinions of the Supreme Court make very clear that the problem to be solved in each case is whether the promotion of the local needs of the state justifies the interference with interstate commerce which such promotion entails. Unripe fruits may be forbidden to leave the state, though oil and gas may not. An unimportant inlet of the sea may be dammed, but bridges over important rivers must be high enough for ships to pass under. Interstate trains may be required to slow down and blow whistles, but may not be compelled to make a detour to accommodate the inhabitants of a given city. The formula under which such cases are decided is as flexible as is the distinction between what is reasonable and what is arbitrary. And the practical considerations almost invariably receive chief attention in the judicial opinions.

Under the due-process clause the Supreme Court has held that a state may restrict the working day to ten hours in mines, but not in bake-shops. Under the commerce clause the states are permitted to tax goods from other states still in the original package, but are forbidden to prohibit their sale. In the absence of any applicable clause in the Constitution, the states are forbidden to tax such part

of the capital stock of a corporation as is invested in United States bonds, but are permitted to tax the franchise of the corporation and base the amount on the capital, even though it is invested in United States bonds. Under the clause forbidding the states to impair the obligation of contracts, a creditor of a city may resist a legislative reduction of the city's tax rate, but has no relief against the legislative restriction of the kinds of property subject to municipal taxation.

These contrasted decisions can not be explained by reference to the language of the Constitution. "Due process" is as silent about bakeries as it is about mines. "Obligation of contracts" is as silent about tax rate as it is about exemptions. The controlling considerations in the solution of these problems have been considerations of common sense—none the less common sense because it may not have been your common sense or my common sense, or because the common sense of the majority of the Supreme Court has at times disagreed with that of their dissenting colleagues.

IV

When we turn to the reasons which are given for the constitutional decisions we find them the same kind of reasons that you and I would give for our judgments. In *Lochner v. New York* which declared unconstitutional a ten-hour law for bakers, Mr. Justice Peckham says that the question is whether the law is a "fair, reasonable, and appropriate exercise of the police power" or an "unreasonable, unnecessary, and arbitrary interference with the right of the individual." He finds it unreasonable because he thinks "there can be no fair doubt that the trade of a baker, in and of itself, is not an unhealthy one to that degree which would authorize the legislature to interfere." Mr. Justice Harlan for the minority says that the question is debatable, and that therefore the court should accept the judgment of the legislature. There is nothing peculiar to constitutional law in this kind of logic. Indeed, if the logic of constitutional law is to be criticized, there is better reason for complaining that it is the kind of logic we all use than for objecting that it is something mysterious.

What is abstruse or mysterious in the opinions of the judges with respect to the constitutionality of the income tax of 1894? The question to be decided was whether such tax was direct or indirect. The majority in the case of *Pollock v. Farmers Loan & Trust Co.* says that a tax on income from land is the same in effect as a tax on the land itself. Since a tax on the land itself is conceded to be a direct tax, the same must be true of a tax on income therefrom. The

minority, on the other hand, appeals to precedent to show that only capitation taxes and taxes on land have been regarded as direct taxes. When land is taxed directly, it must contribute to the government, whether it contributes to its owner or not. But to tax the rentals is not to tax the land itself. If the land yields no income, it pays no tax. Therefore a tax on rentals is only indirectly on land, and is thus an indirect tax. These are the main opposing arguments. The question is certainly debatable. And the judges debated it in the same fashion that participants in an intercollegiate contest would debate it. Varying interpretations were put upon quotations from previous authorities. Differing weight was given to various considerations of expediency.

Mr. Justice White was so convinced that the majority was wrong that he filed a long dissenting opinion, notwithstanding his expressed belief that "the only purpose which an elaborate dissent can accomplish, if any, is to weaken the effect of the opinion of the majority, and thus engender want of confidence in conclusions of courts of last resort." But there is no reason why lack of unanimity should engender want of confidence in the courts. Of course it engenders want of confidence in any notion that constitutional law is some divine voice of which the court is merely the mouthpiece. But the fact that judges disagree, and freely express the reasons for their disagreement, should add to our confidence in their labors rather than detract from it. It indicates that the judgment was reached only after careful consideration and full discussion. We have nine judges instead of one, twelve jurors instead of one, because we know that human judgment is fallible and because we wish by increase of numbers to decrease the margin of error. Though when our passions are strong we sometimes forget that out of a multitude of counsel cometh wisdom, our enterprise of democracy is an expression of our abiding faith that the erring thoughts of individuals are best controlled by the full play of competing opinions. We may therefore lack confidence in the particular conclusions of particular judges, and yet have high regard for the institution that operates, as all human institutions must operate, through the judgments of designated individuals.

V

Some there are who seem to hold that government does not operate through the judgments of individuals. The famous distributing clause of the Massachusetts constitution of 1780 embodies this attitude. The legislative department is forbidden to exercise the executive and judicial powers or either of them; the executive, to exercise

the legislative and judicial powers or either of them; and the judicial department, to exercise the legislative or executive powers or either of them: "to the end it may be a government of laws and not of men." This happy phrase is often on the lips of those who profess to think of government as some mechanical contrivance that, once wound up, will run itself. They would undoubtedly be grieved to hear that a philosophic wag had once revised it to read: "to the end it may be a government of lawyers and not of men." They would not care to be reminded that as long ago as March 31, 1717, Bishop Hoadley said: "Whoever hath an absolute authority to interpret any written or spoken laws, it is he who is truly the lawgiver, to all intents and purposes, and not the person who first wrote or spoke them."

Of course the authority of the Supreme Court to interpret the Constitution is by no means an absolute authority. It is limited in part by the language of the Constitution, in part by prevailing sentiments and by existing conditions. Now that the Supreme Court has been at work for over a century, the authority of the present wielders of judicial power is limited to a large extent by the interpretations of their predecessors. The legislative powers of impeachment and of increasing the number of judges, the executive power to select new incumbents of the judicial office, the possibility that an Andrew Jackson in the White House may refuse to execute the order of the court, or that a commander of armed forces may decline to obey a writ of habeas corpus, as Chief Justice Taney discovered when he ordered Merryman to be brought before him—these are all potential restrictions on the actual authority of the Supreme Court. Yet, in determining a great number of the most important questions, there are two or more courses equally open to the Supreme Court, as the constantly recurring division of judicial opinion amply demonstrates. If by some necromancy the majority and the minority opinions in all the great decisions could be transposed, our constitutional law would be hardly recognizable.

Even the holders of the mechanical theory recognize that in the past the personal viewpoints of the judges have been influential, if not controlling, factors in the course of judicial decision. Chief Justice Marshall is often and rightly lauded for so "shaping the Constitution" that the power of the national government was unhampered by the residuary powers of the states. The fear of the judges themselves that they shall be discovered to be something more than mere automatons is not so acute as once it was. An able judge of one of our state courts tells me that he is usually able to decide cases as his independent judgment dictates. And he cites me a habit of

Coke's to show that this is no new departure. When Coke, he says, had difficulty in adducing precedents for the decisions he wished to reach, he would pen: "As the old Latin maxim saith:" and then he would invent the maxim. In the *Yale Law Journal* for November, 1917, a judge of the New Hampshire supreme court refers to the time "when the court seems to have thought that it was inspired, or that the rules it formulated were revealed to it," and observes that "the study of the history of the court will show how these rules were in fact formulated, and will, I think, demonstrate that they were made by the court in the same way statutes are made by the legislature." In a later issue of the same journal Mr. Justice Riddell of the Supreme Court of Ontario quotes Lord Bramwell to the effect that "one-third of a judge is a common juror if you get beneath the ermine," and adds that: "The other two-thirds may not be far different." And Mr. Justice Holmes, whose judicial opinions teem with wisdom in fine raiment, told us a year ago in the Jensen case that "the common law is not a brooding omnipresence in the sky, but the articulate voice of some sovereign or quasi-sovereign that can be identified." And he says also that he recognizes "that judges do and must legislate," adding, however, that "they can do so only interstitially; they are confined from molar to molecular motions."

Human beings performing a human task—that is the picture thrown on the screen for me by the words "constitutional law." Human beings wondering what to say and how to say it, as I am wondering now, regretting that they lack the time to say it better, to think it through more fully before they write it down. If you hear judges talk about their own decisions and opinions, and criticize or praise the work of their brethren, the mysteries of constitutional law will be revealed. And how could it be made plainer than in every dissenting opinion? If criticism of the courts is a sacrilege, the worst offenders are the courts themselves. Perhaps it is security of tenure that makes them bold. If this is true, it argues well for the grant of security of tenure to all who have the vision and the courage to do something more than echo the platitudes that find acceptance in high places. For dissenting judicial opinions are most valuable equilibrators in the undulating course of the law. They have the modifying influence of the opposition bench in the House of Commons. It is refreshing that the judges themselves have no notion that a sanctity envelops what they write. And the sanctity that lawyers and laymen would sometimes accord to judicial opinions is more lavishly bestowed on those which meet their liking than on those with which they disagree.

VI

In thus emphasizing the common-sense element in the development of the law that is made by judges, I may seem to many to be grossly overstating my case. Others have insisted that judges are slavish adherents to precedent, that they revel in absurd fictions and technicalities, and that they cherish abstractions to the disregard of realities. I will not contend that these complaints are entirely without foundation. But it is a myopic vision which finds these mental traits characteristic of judges or which regards them as the major forces in judicial decision. And the traits are found in many who know Blackstone only as a name. Some of you have doubtless been on committees which disposed of the matter in hand by appeal to precedent or to an abstraction. You may have helped to reject a petition by insisting that it was not properly before you for consideration. But any who have been guilty of such seeming artificiality are well aware that reasons of practical policy actually determined their action. Such is usually true of the seeming artificiality of the law. And the fictions of the law are notoriously the fruit of the desire to achieve some practical end. But even if artificiality is often potent in the mechanics of handling particular cases, it is not characteristic of the gradual shaping and reshaping of the substantive rules of law. If we take a long-time view of the growth and modification of judicial doctrines, we can not escape the realization that beneath the surface the moving forces are the practical judgments of the human beings who wield judicial power.

Lawyer-like and human-like I appeal to authority to support my contention. Over thirty-five years ago Holmes, in his lectures on *The Common Law*, told us:

The life of the law has not been logic: it has been experience. The felt necessities of the time, the prevalent moral and political theories, institutions of public policy, even the prejudices which judges share with their fellow men, have had a good deal more to do than the syllogism in determining the rules by which men should be governed.

And later in the book he reiterates his position:

On the other hand, in substance the growth of the law is legislative. And this in a deeper sense than that what the courts declare to have always been the law is in fact new. It is legislative in its grounds. The very considerations which judges most rarely mention, and always with an apology, are the secret root from which the law draws all the juices of life. I mean, of course, considerations of what is expedient for the community concerned. Every important principle which is developed by litigation is in fact and at bottom the result of more or less definitely understood views of public policy; most generally to be sure, under our practise and traditions, the unconscious result of instinctive preferences and inarticulate convictions, but none the less traceable to views of public policy in the last analysis.

It may seem strange to laymen that these forces are even more potent in the judicial interpretation of a constitution reduced to writing than in the evolution of what we call the unwritten law. But this is nevertheless the fact, at least with respect to the interpretation of those clauses of the Constitution which present the chief field for controversy. And those who are competent to speak tell us that the written codes of other peoples are similarly adapted by the judges to the practical situations which call for practical adjustment. Professor Munroe Smith has outlined the process for us in his lecture on *Jurisprudence*:

For more than two thousand years it has been an accepted legal principle that, in interpreting the written law, effect should be given, as far as possible, to the spirit and intent of the law. Here again the possibilities of lawfinding under cover of interpretation are very great. A distinguished German jurist, Windscheid, has remarked that in interpreting legislation modern courts may and habitually do "think over again the thought which the legislator was trying to express," but that the Roman jurist went further and "thought out the thought which the legislator was trying to think." Of this freer mode of interpretation Windscheid might have found modern examples. The president of the highest French court, M. Ballot-Beaupré, explained, a few years ago, that the provisions of the Napoleonic legislation had been adapted to modern conditions by a judicial interpretation in "*le sens évolutif*." "We do not inquire," he said, "what the legislator willed a century ago, but what he would have willed if he had known what our present conditions would be." In English-speaking countries this freer mode of interpretation has always been applied to the unwritten or common law, and it is usually applied to the written law with a degree of boldness which is very closely proportioned to the difficulty of securing formal amendment. Thus the rigidity of our federal constitution has constrained the Supreme Court of the United States to push the interpreting power to its furthest limits. This tribunal not only thinks out the thoughts which the Fathers were trying to think one hundred and twenty years ago, but it undertakes to determine what they would have thought if they could have foreseen the changed conditions and the novel problems of the present day. It has construed and reconstructed the constitution in "the evolutive sense," until in some respects that instrument has been reconstructed.

VII

Of course in likening the logic and the rhetoric of constitutional law to the logic and the rhetoric of you and me, I am not unaware of differences between an institution and an individual. Constitutional law differs from you and me in that it has a longer history. Its judgments are those of many individuals and not of one alone. It seeks a consistency and a continuity that you and I are free to go without. But even constitutional law changes its mind. In 1895 by vote of five to four the Supreme Court held in *Lochner v. New York* that a state could not limit to ten the daily hours of labor in bake-shops. But the case is no longer law. Very brief is the funeral

oration read by the Supreme Court in 1917 over the death of this same and little-lamented *Lochner v. New York*, which is not even mentioned at its own obsequies. *Bunting v. Oregon*, in which the last rites were solemnized, sustained a ten-hour law applying, not to bake-shops alone, but to "mills, factories and manufacturing establishments." In dismissing the contention that the Oregon statute was not necessary or useful for the preservation of the health of employees, Mr. Justice McKenna said briefly: "The record contains no facts to support the contention, and against it is the judgment of the legislature and the supreme court" of the state.

Constitutional law changed its mind about the power of Congress to make government notes legal tender, about its power to levy taxes on incomes from real estate and personal property without apportionment among the states according to population, and about its power to apply to manufacturing corporations its prohibitions against restraint of trade. And in numerous instances where decisions are not directly overruled, they are whittled away by exceptions to avoid results deemed undesirable. Administrative commissions have been allowed to take over function after function previously exercised by the judiciary or by the legislature, though constitutional law still maintains that such commissions can exercise neither legislative nor judicial power. Notwithstanding the biblical warning, much new wine is poured into old bottles. Often the substance changeth though the form doth not. Constitutional law, as well as theology, can reinterpret old doctrines to meet new needs. Genesis can survive Darwin in rigid sheep as well as in limp morocco.

Without knowing anything about the laws of the Medes and the Persians, except by rumor, I am inclined to doubt whether the rumor that they were unchanging is correct. But the rumor establishes at any rate that such fixity as was theirs was eccentric even in those days. If native to them, it is foreign to the law of the Constitution of the United States as laid down by the Supreme Court. In spite of the stabilizing or stratifying effect of the doctrine of *stare decisis*, constitutional law has less of the *idée fixe* than many of us. But this is not to deny that in spots it is as stubborn as any of us. But, flexible or stubborn, wise or unwise, doctrinaire or practical, constitutional law is not mysterious, but only human—human as you and I are human, as all government is human.

VIII

This analysis of what seem to me the controlling characteristics of constitutional law is not meant to be applied to constitutional lawyers. For those who have won fame at the bar have been for the

most part men whose lives are largely spent in safeguarding private interests against competing public interests. Their private employment is continuous, while the advocates of the public interest serve their brief term and then give way to their successors. Thus there tends to be a persistent bias among lawyers which makes it difficult for them to hold the scales as evenly as do the judges. No one is apt to question the qualifications of Mr. Elihu Root to testify on this point. In his address in 1916 as president of the American Bar Association he says that it is "quite natural that lawyers employed to assert the rights of individual clients and loyally devoted to their clients' interest should acquire a habit of mind in which they think chiefly of the individual view of judicial procedure, and seldom of the public view of the same procedure." And he adds:

There are indeed two groups of men who consider the interests of the community. They are the teachers in the principal law schools and the judges on the bench. With loyalty and sincere devotion they defend the public right to effective service; but against them is continually pressing the tendency of the bar and the legislatures and, in a great degree, of the public towards the exclusively individual view.

It is interesting to note that those whom the bar calls great constitutional lawyers are the ones who have been in great cases, irrespective of their success in those cases. Those who may wonder why the obscure attorney general of some sparsely populated state, or some subordinate member of the Department of Justice, so often wins his case against the leaders of the bar may find a clue to the answer in the observation of an able metropolitan attorney. When asked if he thought it fair that his railroad should be represented by a hundred-and-fifty-thousand-dollar man while the people of the United States had only the services of a five-thousand-dollar man, he replied: "Oh it's not so uneven as that. You see, the Lord is on their side." The remark was not intended to be cynical. It was profound. And it was true, because constitutional law, the distilled and clarified common sense of the judges of our high tribunal, does not "hang in the vacuum of closed speculation," but advances with the march of changing conditions. That is why it is so baffling to many lawyers, as the reason why it is so baffling to many reformers is that it follows conditions rather than leads them.

IX

It may shock some reverential person to hear that law, and especially constitutional law, is not an impersonal and majestic power which moves in some mysterious way its wonders to perform. Those imbued with proper legal piety may think it unbecoming in a

great jurist to tell us in a judicial opinion that constitutional law is a human contrivance that has to take chances. As children we used occasionally to think our teachers something other than human—either better or worse. And the same childlike simplicity characterizes the attitude of some who talk about constitutional law. From varied sources constitutional law has received its meed of reverence and of execration. Some deem it holy; others think it sinister. And after all it is merely human. Being human it undoubtedly makes mistakes. Being human it also contributes to the general weal. All will agree that some constitutional law is better than others. But men will forever disagree as to what is good and what is bad. So also will they disagree about what is good and bad in other human contrivances.

If on the whole we do not like the work of our courts, we may assign their tasks to other authorities. But those other authorities would not be always unanimous. Their majorities would not always please the majority of us. Their logic and their rhetoric would differ little from the logic and rhetoric of the courts. They would inevitably have regard for precedent and for the existing scheme of things. For all of us regard these considerations when we make our individual choices. If we do not wish the courts to be trammelled by precedents, we can declare in our constitutions that they shall decide each case according to their independent judgment. But even then their judgments will be influenced by those of their predecessors. The citation of authorities is not confined to courts. We all do it, and why? Because we have respect for the judgments of others.

There is always danger in personification. What is said about Rome or Greece or Germany or England or constitutional law is usually only measurably true. In picking what seems characteristic for the purpose in hand, we neglect the many exceptions and variations. So on general principles I should be somewhat inclined to plead *nolo contendere* to the charge of overstating my case. Yet my thesis seems to me to take care of all possible exceptions and variations. For it is confined to the contention that the logic and rhetoric of constitutional law, however multifarious its manifestations, is not *sui generis*. Much of it may be peculiar, but it is not peculiar to constitutional law.

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THE COMING BRAVERY—A SPENCERIAN DREAM

IN the light of my remarkable experience that night, I have tried to recollect what I did the afternoon and evening previous. It was Saturday, January 5, 1918, and I came home at noon, I remember, dead tired. I knew I was in no condition for work, so I proposed to the children that we spend the afternoon at the zoo. My suggestion was received with war-whoops of approval. We left immediately after luncheon and were gone the better part of the afternoon: we inspected the bears and the bison, the elephants and the camels, the owls and the ostriches, saw the lions fed, and wound up with a long visit at the monkey-house. After all, what is there at the zoo as fascinating as the monkeys? There were at least half a dozen baby simians in the cages on this occasion—to the immense excitement and delight of the children. The orang-utan, too, was in a particularly gay mood, going through a full programme of antics on his trapeze before an appreciative crowd. It had never struck me before, but one of his gestures is so precisely like that of a lawyer of my acquaintance (who, by the way, is to figure in this narrative) that the effect is actually uncanny.

When we got home, I found that I still had an hour before dinner, just time to drop in on Allan Lampson, a neighbor of mine, who, I had heard the night before, was at last well enough to see callers. I found him in a big chair, swathed in shawls and comforters, with a checker-board, and, oddly enough, a copy of Shakespeare, in front of him. Poor man, he looked more like a corpse than a convalescent, and for fear of tiring him I cut my call short. Still, we managed to cover considerable conversational ground while I was there: we mentioned *Hamlet*, I remember, and the high price of milk (how it must hit the poor people with lots of children); discussed Trotzky and the Brest-Litovsk conference; and got over finally into *Through the Looking-Glass*, the last suggested unconsciously perhaps by the checker-board in Lampson's lap.

I can't seem to recall anything that happened at dinner except that there was only brown sugar for the coffee; but after dinner I went over to the Club, where I ran into a group who were in hot argument over the Russians. That little rat of a lawyer, Brantling, was leading the attack on radicalism—a fact in itself almost sufficient to convert any decent man to the very reddest brand of Bolshevikism. (In a healthy state of society, I contend, no man with a face like Brantling's would be allowed to be extant.) He was going on at a great rate about what would happen if these socialistic and anarchistic ideas continued to spread. "Why!" he snapped out in that rasping little voice of his, "if we don't look out, the I.

W. W. will be setting up a Bolshevik government in this country before we know it."

"Yes," I said, butting in in the most cheerful tone I could command, "these are swiftly moving times. We must be prepared for great changes."

He looked at me with withering scorn, as did a couple of other equally antediluvian members of the group. Then, finally, he said, "Have you ever read Herbert Spencer's *Coming Slavery?*"

I admitted that I had, once upon a time. Whereupon, to freshen up my memory I suppose, he launched into an ominous forecast of the servile state of society on the threshold of which the world (unless it puts itself unreservedly in the hands of the Brantlings) stands. All originality, all independence, all individuality, it appears, are on the point of extinction. The world is about to be reduced to an ant hill. Mankind in the future is to be made up of millions of soulless slaves driven by thousands of equally soulless officials. Liberty, like the Golden Age and the Garden of Eden, is destined to become merely a beautiful memory. Such, at any rate, with much more, was Brantling's comforting prediction.

When, finally, I got an opportunity, I tried to reply by an argument from biological analogy. Every step in human evolution, I somewhat boldly generalized, has taken the form of the surrender of some old liberty for the sake of attaining a new one. For example: the institution of the family required the sacrifice of a hundred old liberties by the parents, especially by the mother, but it brought, in place of them, all the thousands of new liberties that added plasticity of brain implies. Why may not the giving up of some of our present liberties for the sake of a more highly socialized form of the state have similar results? And I developed this idea in some detail. But it made no impression upon Brantling. He couldn't see it. Lawyers, I have discovered, never *are* strong on biology. And besides, Brantling's mind is closed.

Well, to make a long story short, when I reached home at ten o'clock that night, I had under my arm, thrust there against my protests, a dozen or so back numbers of *The Forum*, which Brantling had raked out of the files of the club reading-room, and which, he assured me, contained a series of articles that would be good for my soul. I hate to have old magazines littering up my desk—the current ones are bad enough—so I sat down, before retiring, to glance them through in order that I might return them promptly. The series of articles, it turned out, were reprints of some of Spencer's best-known essays in defense of individualism, prefaced, in each case, by a few words of comment from some distinguished American publicist, captain of industry, or educator. There was one, for in-

stance, by Senator Lodge, one by Mr. Elbert H. Gary, one by Mr. Elihu Root, one by Ex-President Taft. I read enough of these and several others to get the gist of them, though in a number of cases I think I could have guessed, without reading them, their general tenor. Then I dipped here and there into three or four of the Spencerian essays themselves: *The Coming Slavery*, *The New Toryism*, *Over-Legislation*, etc.

It was nearly midnight when I got to bed, and even then my mind refused to drop the speculations on the future of society that the discussion and reading of the evening had set going. It was at least another half-hour before I lost consciousness. . . .

It must have been in the neighborhood of three o'clock when I suddenly awoke. For a moment I couldn't have told whether I was under my own roof or in the Sahara desert—or for that matter who I was. I had had an extraordinarily vivid dream, and when, a second later, I recovered my sense of identity, I sat bolt upright in bed, slapped my knee, and exclaimed, "By George! This will extinguish Brantling and all his crew." And before I fairly knew what I was doing I found myself in my bathrobe at my desk, my electric heater turned on, transferring the still vivid scene and dialogue of my dream to paper. I have seldom written anything with such rapidity. It was not composing; it was simply copying what was already written in my mind. Before four o'clock my work was complete and I was back in bed and sound asleep.

After breakfast the next morning I read over my manuscript. It gave me the distinct sense of having been written by someone else. Perhaps that is why I made only a half-dozen trifling corrections. Then I struck off a fair copy on my typewriter and did it up with the pile of *Forums*. That the return of the latter might not appear indecently prompt, I kept the bundle a couple of days and then dispatched it to Brantling, who lives at the Club. Within twenty-four hours I received the following note:

"Dear Mr. Goddard: I am enclosing a MS. which is evidently yours and which I think must have got slipped into those *Forums* by mistake. Supposing it was intended for me, I read it over. If it was, all I can say is that I couldn't make head or tail of it.

"Faithfully yours,

"HAMILTON BRANTLING, JR."

Here is the manuscript that Mr. Brantling returned:

THE LIONS AND THE APES

(A POSTSCRIPT)

Characters

A Very Old Lion—referred to very reverently by the other lions as
 "Herbert." He is near the point of death.

A Fat, Good-natured Lion.

An Alert, Keen, Handsome Lion.

A Bald Lion, looking Prosperous and Efficient.

A Classically Educated Lion.

A number of other Lions, and a large number of Monkeys.

A cocoanut grove on the edge of a jungle. The monkeys have emerged from the tangled undergrowth that is seen in the background and on the sand under the palms are making a crude experiment in family and community life. Their rude huts are at one side. They wear clothes embryonically suggestive (especially those of the females) of twentieth century fashions.

They are variously engaged. Some are gathering cocoanuts. Some are cooking. Some are setting a rough table. Some are chatting in sociable knots. A pair of lovers are gazing at the clouds. An elderly monkey at an easel is painting the portrait of a young female, who poses comically. All the older female monkeys are greatly handicapped by the fact that each has a litter of baby monkeys to attend to. They seem overwhelmed with helpless offspring—in their arms, on their backs, in their laps.

Young monkeys are playing games that variously resemble tag, hide-and-seek, baseball, and checkers. The smallest of the little monkeys do not control their limbs well and are constantly getting bumps.

There is a confused roaring of lions in the jungle. The monkeys pay little attention until they notice something peculiar in the roars, which have suddenly begun to come with curious regularity. It seems like a sort of roll-call; the lions apparently are taking a vote. Several of the older monkeys pause and look in the direction of the sounds, and then confer in undertones. There is a moment of complete silence in the jungle, followed, all at once, by a loud general roar, as if it were applause at the result of the vote. A little female monkey shrieks with fright.

The Little Monkey's Mother: For shame, Daphne! Don't be afraid of the lions. Their bark is worse than their bite.

Daphne: But nursie told me dreadful stories of what they did to little monkeys when she lived in the jungle.

Daphne's Mother: Fiddle! Nursie was trying to scare you into being good. Don't let her fool you. The lions are really nice old fellows at heart. They *mean* well. The trouble with them is they have never really had an education. We'd be only too happy to have them attend our school out here. But their eyes can't stand the light. They've always lived, you see, there in the jungle.

Daphne: Oh!

[Plainly relieved at the information, Daphne faces the jungle and half defiantly, half coquettishly, thumbs her little nose. Suddenly three large lions emerge from the undergrowth. Daphne shrieks, and dashing to her mother buries her head in her cocoanut-leaf apron. The lions, meanwhile, are blinking helplessly in the light. They take out and put on immense blue and yellow goggles—which seem to aid their vision but add to the oddity of their appearance. As the lions come forward they raise a large white handkerchief on a stick.]

Daphne's Mother: What did I tell you, Daffy, you little 'fraid cat! Brace up, little girl, and be a monkey! The lions have raised a white flag. Either they want to be friends with us or they're afraid of us. If they weren't either friendly or afraid, they'd gobble us up before we could say Jack Robinson.

[The monkeys gather to receive the lions' delegation, which consists of the Fat Lion, the Bald Lion and the Handsome Lion. The Fat Lion is Chairman of the Committee.]

The Fat Lion: Our old King, Herbert, is not at all well. His nerves, especially, are in dreadful shape, and this constant laughter and chattering that you carry on, and the uproar your children make in their play, are very trying to him. We have just been holding a council of w—that is, a council. The majority of the lions at first were in favor of coming out and wiping up the sand with your whole establishment. But we three wiser and calmer old lions finally prevailed. They've given us an hour in which to try to arrange a peaceful settlement. I was always strong for arbitration—so they've made me chairman and flagbearer.

First Monkey: This veiled threat to wipe us out of existence if we don't comply with your terms will have no weight with us, since you've been doing that from the beginning to the best of your ability. That's why we came out here and organized. However, we are always glad to talk things over—especially our females.

The Handsome Lion (with suave irony): Yes, we've heard their chatter. You will note that there will be no lionesses among our delegates or speakers. We left them—where they belong. Their place is in the den.

First Monkey: Well, we're ready.

The Bald Lion: Yes; there's no time to be lost.

[The flag of truce is set up in the sand at the center. The lions' committee goes back to the jungle to report; a confused roaring greets their return. The monkeys, meanwhile, are in a flutter of excitement. They put fresh frocks on the children and stand them in a row. The females rush for their looking-glasses and begin to prink. The males hunt up some cigars for their guests and then stand fiddling with their watch-chains. The prospect of a social call from the lions seems to upset the whole monkey colony far more than the threat of a raid.]

The lions return. The members of the original committee lead the way, each bearing in his arms a great number of books. (The volumes are uniformly bound, the binding, curiously enough, closely resembling that of the sets of the Synthetic Philosophy of a later day.) Next, pushed by two young lions, comes a wheel-chair, in which half sits, half reclines, their decrepit old king, Herbert, wearing a crown. He is emaciated, gasping, and half blind—plainly on the point of dissolution. He clasps to his heart, in a sort of senile convulsion, four or five volumes like those already mentioned. A lion who acts as medical attendant and interpreter walks by the chair. Then follows the general leonine rabble—if that term can be applied to a crowd every member of which is a king of beasts.]

The Fat Lion: We lions want to know what you monkeys mean by coming out of the jungle that God made and intended you to live in, coming out and setting up this insane community on its outskirts, in defiance of the perfectly well known laws and established order of the jungle.

The Bald Lion: And to the detriment of the prosperity and serenity of us lions.

The Handsome Lion: Precisely. We demand that you come back and live like well-behaved and law-abiding monkeys. (*Sotto voce.*) Where we can keep a kindly eye on you.

The Bald Lion (also *sotto voce*): Or if necessary a paw.

The Fat Lion: You are interfering seriously with Herbert's sleep—I beg pardon, with our King's sleep.

The Bald Lion: Your everlasting monkey-stunts give him bad dreams.

The Medical Lion: True. He had a regular nightmare last night. He woke in a bath of perspiration, and it's weakened him dreadfully. Said he dreamed that one of you monkeys—only bigger and whiter—came to put him in a "cage," whatever a "cage" might be.

A Sympathetic Monkey: The old fellow *does* look nearly done for.

Chorus of Lions: Oh! Oh, Oh! What are you saying! "Nearly done for!" Oh, no!!

The Medical Lion: Just a temporary indisposition, I assure you.

The Handsome Lion: Under the weather for the time being.

The Fat Lion (fanning himself): This hot weather is a bit trying to all of us. . . . However, it's you who are the real source of his trouble. What in the Old Nick has got into you since you came out here? You used to be quiet and docile enough in the jungle. *You must come back!*

A Philosophical Monkey: Sorry, my old lad, to disoblige you, but we really can't do it. The fact is we monkeys are sociable by nature. Born that way. Now there's no place to dance in the jungle. And there was no time for it even if there had been a place—too much to do to get food enough to keep soul and body together. But out here, away from that tangle of vines and bushes, we've found that by sort of joining together and splitting up the work, we can really get a great deal more done and at the same time have more opportunity for seeing one another, playing with the youngsters, attending school, admiring the landscape, fixing up our wardrobes, having a bit of music, and otherwise improving ourselves generally. Your hospitable invitation is very kind. But we simply couldn't think of accepting it.

The Handsome Lion: By the white elephant, this is a scandal!

The Bald Lion: It's rank presumption.

The Classically Educated Lion: It's bad form.

The Fat Lion: There's no precedent for such views. I challenge you to find one word of authority for them in all these volumes. I have read them through four thousand times, so I ought to know.

A Curious Monkey: What are they—prose or poetry?

The Fat Lion (a bit pompously): These are the complete works of King Herbert!

First Monkey: Oh, is that all?

Chorus of Shocked Lions: "All!"

The Handsome Lion: Have you no reverence?

First Monkey: Not a bit—for mere books.

The Fat Lion: What! not for the accumulated wisdom of eight hundred generations of the Kings of the King of Beasts—the most powerful of beings created by God and set over his other creatures!

First Monkey: Mostly bluff. But I don't blame you. It is talked into you from your infancy.

The Bald Lion: Infancy! (He points in scorn at the baby monkeys.) Look at *you!* cuddling and coddling all day long. Tied, every last one of you, to a troop of babies! Do you notice any of our cubs with us? I rather think not. Don't you see that you're destroying the few sparks of independence and self-reliance you monkeys ever had? Milk out of a bottle! Why, my last cub was

catching antelopes before he was as old as that one! [He points to another little monkey.] I'd like to see my little Leon have a wrestling match with this one!

The Little Monkey's Mother: And I'd like to see your little Leon play checkers or baseball with my little Frisky!

The Bald Lion: Checkers and baseball!!! Hmp.

[Enter a Ghost. He is a filmy vapory creature and would pass fairly well for the ghost of the missing-link, being a sort of composite photograph of a huge anthropoid ape, a twentieth-century human lion-tamer, and an allegorical representation of Death. He carries a ghostly chain over one arm and trundles a spiritual cage (on wheels), as a boy might trundle an express cart, after him. He has obviously come for Herbert, *to whom alone he is visible*.

Herbert's teeth chatter and his knees knock together at the sight. He roars. The Medical Lion listens closely that he may interpret the roars to the others.]

King Herbert (roaring in iambic pentameter): Rr-rr rr Rr-rr-rr rr Rr, rr-Rr rr!

Various Lions and Monkeys: He sees something! What does he see? What did he say?

The Medical Lion (interpreting): He says: "Angels and ministers of grace, defend us!"

A Lion in the Background: What the devil is that?

The Medical Lion: Give it up. It beats me!

The Classically Educated Lion: That! Why, that's Shakespeare.

The Lion in the Background: Who the devil is Shakespeare?

King Herbert: Rr-RR! rr Rr rr RR! Rr rr rr Rr rr!

The Medical Lion: "Avaunt! and quit my sight! let the earth hide thee!"

The Classically Educated Lion (joining with enthusiasm the game of familiar quotations): "This is most strange."

The Handsome Lion: No; not strange. I think I have an explanation. Herbert, how old was that cocoanut milk you drank last night for supper?

A Monkey: Oh-ho! So that's it. Ask him what he sees.

The Medical Lion (alternately listening to Herbert's roars and interpreting them to the others): (Roars.) He says he sees a great white monkey. (More roars.) He says he sees a . . . a *chain*—whatever that might be. (Roars.) And a—*cage*. (Pitiful broken roars as the Ghost approaches.) He says *it* is going to put the chain around him . . . and . . . put him in the cage!

[Suddenly the old King Lion totters to his feet. There is a certain majesty about him. The Ghost halts in surprise in the very

act of seizing him. The old King, his faculties partly returning on the brink of death, gazes about him at the upturned faces and prepares to address the assembled throng.]

A Lion: He's dying.

A Facetious Monkey: His swan-song. (The other monkeys suppress him.)

A Monkey: Why doesn't he speak so he can be understood?

A Lion: The King uses the language of the fathers.

[The King roars and the Medical Lion interprets.]

The Medical Lion: He says he foresees a time . . . when the jungle will be cut down.

The Lions: Oh! Oh!

The Medical Lion: All its beautiful freedom gone. . . .

The Lions: Oh! Oh!

The Medical Lion: All the lions dead or enchained. . . .

The Lions: Oh! Oh!

The Medical Lion: Life reduced to the monotony and level of a monkey's intelligence.

The Facetious Monkey: Oh, I say!

The Medical Lion (to the monkeys): He says he sees the kind of creatures you will become: slaves to your family life. (Listening closely as the roars rasp and subside.) It's coming! It's coming! *It's coming!*

[As the Ghost comes forward, the Soul comes out of the Old Lion. The Ghost quickly throws his chain about it, thrusts it into the cage, and locks the door; whereupon, with his whole outfit, he vanishes into thin air. Meanwhile the body of the Old King drops down shrivelled and lifeless.

The Lions, in consternation, let down the back of the wheelchair, stretch out the corpse on it, and prepare to carry it back into the jungle. They shake their heads, refusing to admit that their King is gone. They try to pass it off lightly. But their spirit is crushed.]

The Handsome Lion: He'll come around all right.

The Fat Lion: Strong constitution.

The Bald Lion: Indomitable will.

[The funeral procession departs and disappears into the tangles of the jungle. The old monkeys are serious; the young ones hilarious. Some of the latter throw stones in the direction of the jungle. Others get red berries and begin dyeing the flag of truce a bloody red.]

Old Monkey (dispersing them): Quit it! Never wave a red rag

at a bull when you've got him down. It's unnecessary. And it shows a mean spirit.

Daphne's Mother (to her daughter): What did I tell you, Daffy!

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REVIEWS AND ABSTRACTS OF LITERATURE

Movement and Mental Imagery. MARGARET FLOY WASHBURN. Vassar Semi-centennial Series. Boston: Houghton Mifflin. 1916. Pp. xv + 243.

The author takes the motor factors which have frequently been used in theories of attention, perception and emotion, and carries them farther to explain association, memory, imagery and thought.

The book begins with a brief account of nervous conduction and of the learning process, leading up to the concept of a "movement system" in which the kinesthetic sensations from one movement afford the stimulus for the next movement. There are "static movement systems" like those involved in maintained bodily postures, and "phasic movement systems" which involve translation—the movements in the former case being simultaneous and in the latter successive.

The theory is advanced that all consciousness is related to movement. An attempt is made to reconcile the opposed facts that consciousness accompanies obstructed motor discharge (habit formation) and that it accompanies free discharge (action theory), by assuming that there is an optimal ratio of excitation to inhibition in motor discharge above or below which consciousness is lessened.

The image depends upon the initiation of a motor response. When a motor center is excited under certain conditions there is disturbance in sensory pathways connected to it with low synaptic resistance and this is accompanied by consciousness. When the sensory pathway in question is excited from within we have the image. The excitation apparently depends on a "successive movement system" (*supra*), *i. e.*, kinesthetic stimuli. This explains the short duration of imagery *vs.* sensation because the kinesthetic stimuli are brief. The image thus comprises a kinesthetic component and one of the modality to which the image is referred, *e. g.*, visual. Some readers will doubtless query what is the actual physiological accompaniment of this visual aspect, and it is not quite clear from the discussion what happens in the visual center or in its pathway to the kinesthetically excited motor center. Is there a backward

effect of the excitation from motor center to sensory or some "drainage" mechanism? There is a hint of this latter in a footnote. Connections between sensory centers are ruled out by the theory.

In current motor theories of attention it is immaterial whether there is a mere motor impulse toward the object attended or an actual movement. In the theory advanced in the present book there must be a slight actual performance of movement ("tentative movements"). All thought and imagery rests on these tentative movements, and "when the system runs smoothly we have unconscious thought and when delays occur we have sensations and images."

The chapter on "Recurrence of Movements" gives quite an exhaustive survey of the experimental literature on the memory image and the memory after-image and of the conflicting views as to the existence and nature of the latter. It is assumed that there is a tendency for movements, full or tentative, to repeat themselves spontaneously just after they are performed. This explains why things not attended to in the original stimulus may recur in the memory after-image although they never appear in the memory image. Being unattended they enter into no new movement systems, *i. e.*, produce no kinesthetic sensation, and hence can not be recalled after an interval. But the motor centers may become spontaneously active shortly after the stimulus and arouse the details in the memory after-image.

The association of ideas, it is claimed, is really an association between the kinesthetic sensory path produced by a reaction to one stimulus and the motor path connected with the second stimulus. A detailed study follows of the laws governing the strength of associative dispositions: measurement of strength of association,—time for recall, resistance to formation of new associations, and number of repetitions necessary; the effect of repetition—involving as it does a wider variety of tentative movements; the effect of time—rate of forgetting, recency, frequency, *etc.*; the interference of associative dispositions—various forms of inhibition. This chapter gives a good survey of experimental methods and results in memory, recognition and forgetting. Other factors such as the effect of rhythm, place in a series and constellation are discussed similarly in the following chapter.

The author then applies her theory to the higher processes. The problem idea that directs the thought process is characterized mainly by its persistence of influence, and this is due to persistent tentative movements. The persistence comes from association of the motor excitation on which an idea is based with an internal static move-

ment system—the activity attitude,—and the activity attitude in turn is set up only when the idea appeals directly or indirectly to some instinct. Judgment involves delay while the movement systems concerned with the subject recur for an instant. Reasoning has a longer delay and involves movement systems connected with two other such systems (the premises). Even the undistributed middle and illicit processes are explained by improper development of movement systems.

The conflicting views on imageless thought are summarized. Considerable significance is attached to the fact that some of these imageless processes can be named and others not, and it is assumed that all namable ones are based on kinesthetic excitations. A number of common instances are analyzed, *e. g.*, “difference” is a “shift of motor excitation;” “but” occurs when dispositions of equal strength tend to excite incompatible movements. The non-namable variety of imageless thoughts occurs either when something is blocking the associative process or when thinking is especially rapid, *i. e.*, when there is a condensation of imagery.

The final chapter deals with cases of dissociation. Automatic writing is possible on the author’s theory when incompatible movements are not involved. Sleep is an attitude of relaxation, and deep sleep without motor contractions is unconscious, for consciousness depends on movement (*supra*). The Freudian “censor” is the most firmly established movement system. Hypnotism is similar to sleep, the suggestion coming however from a concentrated rather than diffused source.

The book consistently follows the motor theory of consciousness through the higher mental processes. Quite a number of assumptions are necessary in the development of the theory and probably will not meet with universal acceptance. The author hints at the outset that her intention is a pragmatic one, and the assumptions appear to work well. Aside from the developments of the motor theory the book gives a good summary of the extensive literature on memory, imagery and the thought process. The attempt to adequately summarize these fields in which such a mass of material has been published, (and so much of it worthless) is heroic, and it is well done. To the majority of readers this aspect of the book will be more valuable than the theoretical. Any student approaching topics in imagery and the thought process would do well to consult it for a preliminary survey of the field. He would be appreciably assisted also by the appended bibliography of 162 titles.

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JOURNALS AND NEW BOOKS

JOURNAL OF EDUCATIONAL PSYCHOLOGY. February 1918. *Methods and Results of a Class Experiment in Learning* (pp. 63-82) : W. F. DEARBORN and J. M. BREWER. — General principles concerning individual differences, characteristics of the curve of learning, correlation, effect of various factors on individual progress, characteristics of the curve of re-learning, and facilitation or interference as a result of practise are illustrated by a class experiment. *Certain Abilities Fundamental to the Study of Geometry* (pp. 83-90) : J. H. MINNICK. — Four abilities are called upon in the formal demonstration of a theorem of geometry—ability to draw a figure, ability to state the hypothesis and conclusions, ability to recall additional facts about a figure when one or more facts are given and ability to select from the available facts those that are necessary for a proof, and to arrange them so as to arrive at the desired conclusion. The purpose of the experiment was to determine the relation of each of these four abilities to teachers' marks, to determine the extent to which these abilities are developed in the various schools included in the investigation, to develop tests which may be used for the purpose of diagnosis. *A Study of a Class of Children of Superior Intelligence* (pp. 91-98) : HENRIETTA V. RACE. — From the study it was concluded that gifted children are able to accomplish, with ease, the ordinary two years school work in one year, that they are apt to be unusually able in various fields of human learning, that they are especially capable of handling ideas and that their thinking is marked with quickness and directness. *Communications and Discussions. Abstracts and Reviews. Editorial. Notes and News. Publications received.*

Calkins, Mary Whiton. *The Good Man and the Good: an Introduction to Ethics*. New York: The Macmillan Company. 1918. Pp. xx + 219. \$1.30.

Sarkar, Benoy Kumar. *Hindu Achievements in Exact Science: A Study in the History of Scientific Development*. New York, London and Bombay: Longmans, Green and Company. 1918. Pp. xiii + 82. \$1.00.

NOTES AND NEWS

THE Summer Training School of Psychiatric Social Work conducted by the Boston Psychopathic Hospital and Smith College under the auspices of the National Committee for Mental Hygiene opened at Smith College July 7th with an enrollment of 68 young women

from 21 states and as many colleges. The purpose of the school was to give in eight weeks the theoretical background necessary to prepare social workers to assist in the rehabilitation of soldiers suffering from "shell shock" and other nervous and mental disorders. The courses which were offered included the following range of subjects: Social Service, Miss Mary C. Jarrett, Boston Psychopathic Hospital, director of the school; Psychiatry, Dr. Edith Spaulding, Bedford Hills; clinical lectures, Dr. J. A. Houston, Northampton State Hospital for the Insane, the clinics being held at the hospital; Sociology, Professor F. Stuart Chapin, Smith College; Psychology, Professor David C. Rogers, Smith College; Mental Tests, Miss Ruth S. Clark, Smith College. Additional lectures were given to the school by the following: Dr. E. E. Southard, Boston Psychopathic Hospital; Dr. L. Pierce Clark, New York City; Dr. Walter S. Fernald, School for Feeble-Minded, Waverley, Mass.; Dr. Adolf Meyer, Phipp's Clinic, Baltimore, Md.; Dr. William Healy, Baker Foundation, Boston, Mass.; Dr. A. A. Brill, New York City; President Raymond L. Wilbur, Leland Stanford University; Captain A. E. Bott, Hart House, Toronto, Ont.; Captain C. B. Farrar, Cobourg Military Hospital, Cobourg, Ont.; Dr. James J. Putnam, Boston, Mass.; Dr. H. W. Frink, New York City; Dr. Abraham Myerson, Dr. Lawson Lowrey, and Dr. Josephine Foster, Boston Psychopathic Hospital; Dr. George Amsden and Dr. Charles Lambert, Bloomingdale Hospital, White Plains, N. Y.; Dr. George Kirby, Dr. H. A. Harrington, and Dr. Clarence Cheney, Psychiatric Institute, Ward's Island, N. Y.; Dr. E. Flood, Monsen State Hospital, Palmer, Mass.; Dr. Albert Barrett, Psychopathic Hospital, Ann Arbor, Mich.; Dr. H. A. Mitchell, State Hospital, Warren, Pa.; Dr. T. H. Ames, New York City; Professor H. N. Gardiner, Smith College; Dr. Frank P. Norberry, New York City; Dr. Herbert Hall, Marblehead, Mass. Of the 58 students who satisfactorily completed the course, those who had not previously had the required amount of practical work were assigned to the following clinics and hospitals for six months further training: Boston Psychopathic Hospital; Phipp's Clinic, Baltimore, Md.; Manhattan State Hospital, Ward's Island, N. Y.; Neurological Clinic, New York City; Massachusetts General Hospital, Boston, Mass.; Boston State Hospital; Boston Dispensary; University Hospital, Philadelphia, Pa.; Charity Organization, New York City; Cornell Clinic, New York City; Society for Organizing Charity, Philadelphia, Pa.; and Home Service, American Red Cross, Boston, Mass.

THE Council of the American Psychological Association has voted to abandon the annual meeting which was scheduled for December, 1918.

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

THE SUBJECT MATTER OF FORMAL LOGIC¹

IF by logic is meant a clear, accurate, and orderly intellectual procedure, then the subject of logic, as presented in current text-books comes near being the most illogical in our chaotic curriculum. Defined almost universally as dealing with the laws of thought and devoting considerable space to the way in which the mind proceeds or fails to proceed in conception, judgment, and reasoning, it is neither clearly distinguished from psychology nor frankly treated as a branch of that modern universal science. In addition, the following miscellany is interjected into our science, designed to train young people in the habits of clear thinking: (1) Linguistic information as to the meaning and use of words, extending often to their history, and grammatical considerations as to the structure of sentences; (2) rhetorical considerations as to the persuasive force of various arguments; (3) metaphysical considerations as to the reality or unreality of universals and particulars and their relations; (4) epistemologic, *i. e.*, mixed psychologic and metaphysical, considerations as to the nature of knowledge and its relation to what is called the world of reality; (5) catalogues of miscellaneous ancient errors, under the head of material fallacies; (6) pedagogic directions as to the conduct of the human understanding, teaching us how to discover the cause of typhoid or of some other disease of which the cause is already known; (7) miscellaneous general considerations of various other sciences and their histories, which pretend to describe the essence of scientific method; and (8) the rudiments of formal or symbolic logic, as in the theory of classes or syllogisms, which, as developed in such books as Couturat's "Algebra of Logic," is strictly a mathematical science, though it need not necessarily be expressed in special symbols.

Mixed studies, like mixed races and mixed constitutions, show the greatest vitality, and there could be no valid objection to the same text-book treating all these important matters, provided the information given were accurate and the various points of view

¹ Read before the American Philosophical Association, December, 1917.

clearly distinguished. As to the accuracy of the information, especially in the sections on scientific method, my respect for distinguished professional colleagues prevents me from using such words as scandalous or disgraceful. I can only say that a blameless life as a minister of the gospel or as a college teacher does not qualify one, even after he has consulted previous text-books on logic, to become an authority on the methods of the various sciences—topics which only the masters of such sciences can justly deal with. My main point, however, is that the failure clearly to distinguish between the various points of view just mentioned has bred a great deal of the confusion of modern philosophy. I am not certain that logic can do much to train students in the habits of clear thinking. But logic ought certainly not to infect eager and trustful young minds with fundamental confusions, confusions which determine the setting of subsequent philosophizing. If this negative precept seem unimportant, I should like to remind you that modern hospital methods were revolutionized by Florence Nightingale, I believe, by this very insistence that, whatever else hospitals may do, they should not spread disease.

II. Nearly all the books define logic as in some manner the science of thought. But that the laws of logic are not the universal laws according to which we do actually think is conclusively shown, not only by the most elementary observation or introspection, but by the very existence of fallacies. Nor do we free ourselves completely from this difficulty by saying that logic deals with the laws according to which we think when we think correctly. Assuredly, correct thinking takes place only under favorable physiological, educational, and moral conditions. But we do not expect any treatise on logic to deal with the physiologic and moral conditions of mental health. To define logic as dealing with the laws according to which we ought to think does not define its distinctive subject, since the principles of every science are in a sense laws according to which we ought to think if we would think correctly on its distinctive subject-matter.

III. The distinctive subject-matter of logic, constituting, as a matter of fact, the core of the traditional Aristotelian logic, is what is called formal truth. The distinction between material and formal truth, like the related distinction between assumption and proof or between immediate and mediate truth, is not without its difficulties. But it is clear that we must distinguish between the factual truth of any proposition and the truth of the assertion that it logically follows from, or necessitates as consequences, certain other propositions. It is one thing to assert categorically that Nineveh fell in 622 B.C. and quite another to assert that, if it did, it must have pre-

ceded and can not have followed the Scythian invasion of 621 B.C. It is one thing to assert that through a point outside a straight line only one parallel can be drawn, but quite another matter to assert that, whether that proposition is true or not, from it and certain other propositions it necessarily follows that the sum of the angles of a triangle is equal to two right angles.

In any given context it is relatively easy to distinguish between the categoric assertion that a given proposition is true and the formal truth, validity, correctness or adequacy of the proof or demonstration that it follows from certain other propositions. In any given case, also, it is rather easy to see that the material truth of premises or conclusion and the validity of the proof may be relatively independent of each other—a proposition known to be false may be correctly proved (from false premises), and the proof of a true proposition may be formally defective. But when we come to deal with the general nature of formal truth and its relation to material truth we begin to encounter difficulties. Many, however, of the traditional difficulties may be eliminated if we take the trouble to distinguish clearly between reasoning or inference as an operation or event which happens in an individual mind and the question of evidence or general conditions under which what is asserted can be true. When this is recognized it becomes clear that logical or formal truths are truths concerning the implication, consistency, or necessary connection between *objects* asserted in propositions and the distinctive subject-matter of logic may be said to be the relations generally expressed by *if—then necessarily*.

Terms and relations, matter and form, immediate and mediate truth, are like north and south poles, strict correlatives, clearly distinguishable and inseparable—the existence of each is necessary to give meaning to the other. But obsessed by the monistic prejudice, philosophers have refused to recognize any ultimate polarity or duality,² and have perpetually sought to reduce everything either to form or to content. The former effort leads to empty panlogism, the latter to dumb mysticism. Without pretending to settle the problem, we may avoid the dilemma by recognizing that matter and form are strictly correlatives in every concrete situation, and that when we take the world of science as a whole it is found to contain besides logical relations an alogical element which no efforts of panlogism have successfully eliminated. At any rate there is no insuperable objection to the assertion that logical truth or consistency is a genuine part of the world of truth which science studies. What we call

² This difficulty of philosophers is precisely that of the exuberant individual who puzzled two policemen with the problem, "Which side of the street is *the* other side?"

the evidence for the material or factual truth of any proposition involves—excepting matters of immediate apprehension which are beyond argument—the question of the logical relation between the proposition in question and certain others which are taken for granted. Thus, we rule out the proposition that there is life on the planet Mercury, by the proposition that life can not exist except at certain temperatures, *etc.* In the same way the question of formal truth enters as an integral part of the material truth of what have been called practical propositions. Thus all of the practical judgments recently called to the attention of logicians by Professor Dewey can be put in the traditional hypothetical form of formal logic—if you want to recover, you must see a doctor, *etc.*³ Indeed the relation of means to end is logically only one type of the relation of parts to wholes. This can readily be seen when we compare with the above practical judgments such theoretic judgments as, to complete the square you must add one to both members of the equation, or to reduce nine to seven subtract two, *etc.*

Similarly, formal consistency forms part of artistic or dramatic truth. If Hamlet is a prince, he must act consistently with the supposed nobility of that character. If he has studied many years at Wittenberg, he must show the scholar's aptitude for reflection on both sides of the question, to be or not to be.

It may be objected that in all these latter examples we are dealing with matters of fact that are contingent and not at all logically necessary. Life on this planet has been empirically found to exist between certain temperatures. In other planets it might be different. Even on this planet people may get well without consulting a doctor, princes may be undignified, and those who study at Wittenberg may not reflect at all. This objection, however, in no way militates against our account of the nature of the logical or formal relation. The objector raises an issue of fact. He challenges the material truth of the major premises assumed in these examples and not the necessity of the inferences drawn from them. This raises in each case an issue of fact to be settled by evidence, but it leaves unaffected the logical test of necessity which is, whether it is or is not possible for the antecedent to be true and the consequent to be false at the same time. In a world in which all princes are dignified it is impossible for Hamlet to act like a clown; and if the Hamlet on the stage does behave like a clown he only irritates us by his failure to live in the world of our assumption. When we demonstrate or prove a proposition in physics, *e. g.*, that if there were two bodies the smaller would on receiving a tangential motion

³ It is because in practical judgments, the protasis or conditional clause is understood and not expressed that there arises the seeming difference.

describe an ellipse about the larger, we show that it is impossible for certain accepted principles (the law of gravitation) to be true and the demonstrated proposition to be false. When we come to the demonstrations of pure mathematics we do not restrict our postulate to any particular universe, but are concerned with the universe of all possible meaning. $2 + 2 \neq 4$ is impossible, therefore, in any universe in which 2, + and 4 have the meanings assigned in our arithmetic.

IV. The need for considering the formal implications of an hypothesis, independently of the question whether it is in fact true, has led to the erroneous view that formal logic considers the consequences of propositions apart from their meaning. It ought to be clear, however, that a proposition devoid of all meaning would be just nonsense from which nothing could possibly be deduced. The particular logical consequences of any proposition surely do not follow from the mere sounds or marks on paper but from the nature of the objects asserted in the proposition. All scientific procedure, however, rests upon our ability to consider the abstract general characteristics possessed by all the objects of a group, leaving out of account the more specific nature in which they differ. Thus mechanics considers the mass and motion of bodies apart from their color, relative scarcity, or other property; and even more specialized sciences like crystallography, bio-chemistry or genetics, all consider isolated or abstract properties possessed by widely different objects. Similarly it is possible for logic to abstract from the specific concrete meaning of propositions those elements which are common to whole classes of propositions, and to denote these common elements by suitable symbols. When, therefore, mathematical logicians use such forms as *p implies q* they are not talking about propositions devoid of all meaning but about a certain property of classes of propositions.

The term property has a somewhat misleading connotation. It suggests an inert quality inhering in a substance. It may, therefore, be advisable to substitute the notion of operation or transformation for that of property.

In social usage, formal rules are rules of procedure applicable to all the members of a given class, irrespective of any personal characteristics such members may have. In the same way, every science has its rule of operation or laws according to which all the objects it studies can be combined. Logic is the most general of all the sciences; it deals with the elements or operations common to all of them. That is, rules of logic are the rules of operation or transformation according to which all possible objects, physical, psychological, neutral, or complexes can be combined. Thus, logic is an

exploration of the field of most general abstract possibility. This may make logical information very thin; but it is not therefore devoid of significance. Not only does it rule out impossibilities but it reveals the possibilities of hypotheses other than those usually taken for granted; and in this respect it frees the mind and contributes not only to the fixed form but to the living growth of science. The history of science shows beyond doubt that the vital factor in the growth of any science is not the Baconian passive observation but the active questioning of nature, which is furthered by the multiplication of hypotheses as hypotheses.

V. The foregoing explanation of what we mean by formal rules explains the great utility of symbols not only in logic and mathematics but in all exact sciences.

Whatever be the psychologic nature of the reasoning process, it is a fact that this process is facilitated by the use of artificial counters or symbols which represent only the general properties under investigation and not any of the specific properties which must be excluded. As the rules according to which our symbols can be combined are by hypothesis precisely those according to which the entities they denote can be combined, it follows that it is not necessary that we keep the concrete meaning or cash value of our counters always before us. If our reasoning is correct the meaning of our final result follows from our initial assumptions; and this, I take it, is one of the great advantages of any calculus or system of symbolic manipulation.

The employment of special symbols instead of the more familiar symbols called words, is a practical convenience rather than a logical necessity. There is not a proposition in logic or mathematics that can not be ultimately expressed in ordinary words (this is proved by the fact that these subjects can be taught to those who do not start with a knowledge of the special symbols). But practically it is impossible to make much progress in mathematics and logic without appropriate symbols, just as it is impossible to carry on modern trade without checks or book credits, or to build modern bridges without special tools. Symbolic reasoning is essentially reasoning on a large scale with instruments appropriate to such wholesale undertakings. If we want a large number of fish, we must use nets rather than single lines. The opposition to symbolic reasoning, like the old opposition to the introduction of machinery, arises from the natural disinclination to change, to incur trouble or expense for a future gain. The prejudice against careful analytic procedure is part of the human impatience with technique which arises from the fact that men are interested in results and would like to attain them without the painful toil which is the essence of our mortal finitude.

VI. The nature of the subject matter of logic may be better understood when it is seen to be identical with the subject matter of pure mathematics. This identity of logic and pure mathematics is the discovery of the nineteenth century, and was not possible before the discovery of non-Euclidean geometry and of multiple algebra revealed the true nature of pure mathematics. From the days of Plato to those of Kant, geometry was viewed exclusively as a science of physical space, and as the Euclidean axioms were regarded as self-evidently true, it was possible for Kant and his predecessors to maintain the existence of an *a priori* knowledge of nature. The discovery of non-Euclidean geometry shows that the axioms of the traditional geometry are convenient assumptions and not *a priori* necessities of thought or perception. Their contraries have been proved capable of receiving an equivalent logical and mathematical development, so that pure geometry alone is incapable of deciding the question of whether physical space is Euclidean or not. Geometry, as a branch of pure mathematics, serves only to develop the necessary consequences of various hypotheses or assumptions. Similar considerations apply to algebra, which used to be defined as the general science of number or quantity. The discovery of the real nature of the so-called imaginary numbers, and the consequent development of the various types of complex numbers and of various types of algebra, have brought out clearly that all algebra is essentially a calculus of the implication of certain rules of operation or combination. The commutative and associative laws of addition and multiplication are not necessities of thought, but assumptions which define specific transformations applicable only to those fields of nature to which they are empirically found to be applicable. But the rules or postulates of any algebra being laid down, the development is a matter of pure logic. Algebraic proofs are in every respect logical proofs and depend no more on any special element of intuition than does logic itself. For pedagogic or administrative purposes it may still be necessary to refrain from identifying mathematics with the whole region of necessary inferences in which all exact science is located, but in point of fact there is no significant difference between pure mathematics and deductive reasoning. What we usually call formal logic is simply the study of the most general portion of pure mathematics.

The assertion of the identity of logic and pure mathematics has appeared as a paradox and as a stone of stumbling to many philosophers, and even to some mathematicians. Surely, they tell us, a proposition about circles, quintic equations or prime numbers belongs to a different science than a proposition about syllogisms. This objection is perfectly valid so long as we uncritically accept

the views of mathematics and logic of our traditional school textbooks. If, *e. g.*, circles are viewed as objects in space, like stones or caterpillars, while logic deals with "laws of thought as such," then all talk about the identity of logic and geometry is sheer intellectual violence. But to take this view is to ignore the distinction between pure and applied mathematics. If we view circles as existing things in actual or physical space then geometry is a branch of physics or applied mathematics—the simplest branch of mechanics, as Newton has shown in the preface to the *Principia*. But geometry as a branch of pure mathematics is in no way concerned with the existence of circles in the physical world. Euclidean and non-Euclidean hypotheses can not simultaneously be true of the physical world, yet they are all equally legitimate branches of pure geometry, as is also the geometry of a four-dimensional space. Geometry, as a branch of pure mathematics, is interested in a problem of logical proof: whether if certain propositions (axioms, *etc.*) are true, certain other propositions must be so likewise. In the construction of its chain of demonstration, geometry, as has been shown by Pieri, Hilbert and others, does not need to use any concept except those definable in terms of the fundamental notions of logic (classes, relations, *etc.*), nor does it need to assume any primitive proposition except those assumed in logic. In pure geometry, then, propositions about points and lines are replaced by propositions about classes of indefinables and relations between them. You may object on linguistic ground, that propositions about classes and relations ought not to be called geometry, and that unless we continue to identify the indefinable "points" with the intuitable spots on paper or blackboard we ought not to keep the name geometry; but the significant fact remains that if you examine any rigorous treatise on plane geometry you will find that it will make no difference in the form and sequence of our propositions if our indefinable points are replaced by complex numbers, or if "distance between points" is replaced by differences of holiness in a multi-dimensional series of saints.

VII. A serious obstacle to the recognition of the identity of the subject-matter of logic and that of pure mathematics, an obstacle that has had a great influence on philosophers and mathematicians like Poincaré, is the assumption of the ancient dogma that in strict deduction there can be nothing in the conclusion which is not already contained in the premises. From this it is argued that mathematics, so fertile in unexpected discoveries, can not be purely deductive. Any argument that a certain thing can not be is refuted if we can actually show it, and to the contention that mathematics can not be reduced to formal logic, the actual doing of it by Frege, Peano, Pieri, and Whitehead and Russell is sufficient refutation. It is in-

structive, however, to examine the dogma at the basis of this obstinate refusal to admit an established fact, especially since the dogma is closely related to the generally accepted but essentially obscure dictum that all knowledge comes from experience.

The notion that deductive reasoning must necessarily be a sterile series of tautologies arises from the failure to distinguish between psychologic, physical, and logical considerations. Psychologically it is obviously not true that the conclusion is always contained in the premises. For ages men accepted the elementary laws of arithmetic without seeing that they involve as a necessary consequence the proposition that there are no two numbers whose ratio is the square root of two. Or, to take a more concrete example, I may know that the *Camperdown* was sunk and none aboard could be saved, and I may know also that Smith sailed aboard that ill-fated vessel. And yet it may be some time before the union of these two propositions flashes on my mind the startling conclusion that Smith must have been drowned.⁴ To suppose that when we think of any proposition or group of propositions, we always have in mind all their logical consequences is a supposal inconsistent with the fact that many find the study of mathematics difficult or are easily tripped by lawyers on cross-examination. Nor is strict deduction incompatible with the existence of physical novelty, *i. e.*, with the coming into being at certain moments of time of that which did not exist at previous moments of time. The fact that the moon is every moment in a new position does not make it impossible to deduce a comprehensive formula for its path out of a few past observations and the hypothesis of universal gravity.

The consequences in a deductive system, then, may be new in time as well as psychologically startling or unexpected, and yet there will be no proposition in our series which is not necessitated by the premises. The difficulty with the traditional doctrine arises from the prevailing confusion between the process of thinking or learning which takes place in time, and the logical relations discovered, which do not form a temporal series at all. *In natura rerum* premises do not exist prior to their conclusion any more than they exist to the right or to the left of them. The spatial and temporal order is of very wide application, but we must guard against its undue extension. Thus it is well to note that when we speak of the con-

⁴ The silly character of the old argument that every syllogism involves a *petitio principii* because no universal can be known before we know all the particulars under it, becomes clear when we take a practical syllogism such as, all persons convicted of crime should be disfranchised, my brother has been convicted, *etc.* Jephthah said, Whoever cometh forth, *etc.* Yet he was surprised when his daughter proved to be the one.

clusion being contained in the premises, we are resorting to an uncritical spatial metaphor. The inexhaustible theorems of algebra are assuredly not contained in its few axioms or primitive propositions in the way in which the chairs and other objects are contained in a room. All the possible games of chess that can be played can be deduced from the few rules of that game. But the games are not literally contained in these rules. The notion of containing may, indeed, be used in a wider sense to denote a certain relation of order, of which the spatial relation of container and contained is one instance. But in this wider sense not only are the games contained in the rules but the rules contained in the multitude of games, as invariant changes or transformations common to all of them. The particular is in one sense part of the universal but in another sense the universal is simply that part or aspect of the particular which is the object of study. The tremendous usefulness of general propositions and the predilection of Greek rationalism and medieval authoritarianism have spread the view that general truths have something of a superior status, superior certainty, superior authority and what not. But in respect of logic, premises and conclusions are on the democratic basis of strict correlatives. Logic shows that certain premises are sufficient or necessary for certain conclusions or that certain conclusions necessarily follow from certain premises. *The categoric assertion of either premises or conclusions involves something more than logic.* If, then, the laws of logic are rules of combination, nothing can be deduced from them except various combinations of logical rules. And it is as impossible to derive physical or psychologic truth from pure logic as to build a house with nothing except the rules of architecture. To say, however, that there is nothing in any logically or mathematically developed science except what is contained in its data is to say that there is nothing in a building except what is contained in its bricks, mortar, and other materials. The form or structure of a house is constituted by the system of relations between the material entities which make it up; and the form or structure which logic studies is the system of relations which hold between all possible objects that can be ordered into a system.

VIII. According to the prevailing view, the relations between premises and conclusion exist in the mind only. This means either that terms and propositions apart from their relations exist in the so-called external world, or else that nothing at all exists outside of the mind. If we put terms in one world and relations in another, it is difficult to see how the terms can have an intelligible or knowable character, and how relations in one universe can be said to be the relations of terms in another. This is the basis of the familiar but unanswerable difficulties of epistemology—how ideas in a mind

can know things in a world external to it. If, on the other hand, the terms logically related also exist in the mind, then the distinction between logic and physics is still to be maintained, and the distinction between the two can not be derived from their common mental nature. One engaged in an actual logical or mathematical investigation can no more make any progress towards a definite solution of a problem by invoking any doctrine as to the nature of mind or thought than he can by invoking a theory as to the nature of God and His providence.

IX. It has always been recognized that logic deals with relations that are necessary, but the nature of necessary relations has been obscured, first, by the Stoic confusion between that which is necessary and that which is generally accepted, and by the modern identification of necessity with psychologic certainty. Obviously, the existence of fallacies proves that we may be certain of many things which are not necessarily true, and the widespread extent of such certainty is not of itself a logical proof—at least, not in the field of an exact science like mathematics or physics. Perhaps it is the subservience of logic to rhetoric (the art of disputation) that has caused us to look upon logical proof exclusively as a method of producing certainty or conviction. The essence of deduction or proof, however, is not the psychologic certainty which it may or may not produce, but the exhibition or demonstration of the logical structure of the system studied. The fact that a theorem about the sum of two sides of a triangle being greater than the third is derived from a Euclidean axiom does not add to its psychologic certainty; but it does reveal the structure of the Euclidean system in showing that in so far as that theorem is concerned no additional axiom is necessary.

Certainty is a primal need of the intellectual life. We all need some ground from which to start and on which to light after our short swallow flights of doubt and critical reflection. Some walk with firmer foot in answering the question: what facts exist? and some in answering the question: what claims are valid? Logically, however, existence and validity are strictly correlative. We must admit certain things to exist because their claims are valid, and claims are valid because they exist as such. The existence of the logical or relational structure of Euclidean geometry is as much a fact as the composition of albumen, the structure of rocks, or the constitution of the solar system, all of which depend on geometric relations. But if the distinction between logic and physics as indicated above is valid, it is well to distinguish between logical relations which are necessary, and factual relations which are contingent. This distinction may be made in two ways: First, particular sciences

like physics may be said to start with material assumptions; *i. e.*, assumptions true only of certain objects, namely, entities occupying time and space, while logic assumes only laws applicable to all objects. The second way of drawing the distinction is to say that while physics and other special sciences assume systems governed by laws the contraries of which are abstractly possible, logic deals with laws whose contraries are devoid of meaning or application to any possible determinate objects. The assumptions of even the most developed physical science, such as mechanics, can be shown to be sufficient, but can not be proved necessary, since it is possible that some other hypothesis may explain the facts. But the assumption that the objects of physics and other sciences must conform to logic is necessary in the sense that without it no science at all can be constructed.

X. Against the view that logic explores the realm of the possible and the necessary we have the extreme nominalism or empiricism of men like Hume, Mach, and Schiller, who deny the existence of objective necessary relations and reduce everything to a consideration of the actual existence of terms or impressions. This glorification of the category of existence and disparagement of the categories of possibility and necessity shows itself in its clearest form in Mach's contention that the world is given but once and that it is not valid to argue as to what would have happened if things were different. Mr. Schiller is a loyal disciple of Mr. Bradley in his distrust of abstractions. Mr. Brunschvicg, in a recent book, thinks it a triumphant argument against the new logical realism that it is as applicable to the world of Poe's imagination as to the real world of science. The error underlying this view is as profound as it is widespread. The category of reality belongs not to science but to religion. It arises not as an aid to an intellectual analysis of our world, but as a means of escape or deliverance from the perplexities and confusions of deceitful appearances in a disorderly world. At any rate, it is rather easy to show that the prejudice in favor of reality (and the special form of it which glorifies the category of existence) is based on an inadequate analysis of the nature of science. Science would be impossible if we could not study the consequences of materially false hypotheses. In all sciences the consequences of rival hypotheses, such as those concerning the ether, must be deduced irrespective of their material truth, and indeed as a necessary condition before the material truth can be determined. Though two contradictory hypotheses can not both be true in the material or existential sense, both must be assumed to have determinate consequences. The realm of science can not, therefore, be restricted to the realm of actual or historic existence. Indeed, determinate exist-

ence without any reference to possibility would be meaningless in mundane affairs. Science studies the character or determinate properties of things, whether actual or possible. In this respect science, like art and practical effort, liberates us from the prison-house of the actual and enables us to penetrate beyond to the region of the possible. What we call ideals or hypotheses are our guides in the labyrinth of possibility. The positivists who boast that they are concerned only with what is, like the hard-hearted statesmen or business men who say that they deal only with hard actualities, are deluding themselves with fantastical dogmas, hiding the crudity of their ideals with the pretense that they have none.

XI. We have used the term logic or formal logic as identical with deduction. But as modern text-books on logic devote more and more attention to what they call methodology and induction, a few remarks on these subjects are called for.

Though the term "method" is one of the most frequently used, it is one of the least frequently defined terms in the whole repertory of philosophy. It is, therefore, best to examine what is actually treated under the head of methodology, and this I think will always be found to fall under one of the following heads:

1. Elementary ideas or general principles, culled from the various special sciences, and stated perhaps in a more abstract and uniform language than in the books professing to deal with these special sciences directly (*e. g.*, Bain's *Logic*).

2. An account of the psychologic processes involved in scientific thought, *i. e.*, in the process of learning or scientific demonstration (*e. g.*, Sigwart and his followers).

3. Historical information as to the way certain great scientific discoveries are supposed to have been made, and

4. Directions as to how science is to be cultivated so as to lead to discovery of laws or causes.

Of these the first three may be auxiliary to pure logic but certainly outside of its proper domain, while the fourth is entirely beyond its competence.

Though the idea of logic as an organon or aid in discovery seems to be as ancient as the science of logic itself, it does not seem to me that this claim can be seriously supported on behalf of either the ancient Aristotelian or the modern Baconian logic. In the main it is true enough that a knowledge of truths already known is the principal condition for the discovery of new ones, and the knowledge of any science may thus indirectly help in the exploration of any other field; but the science which will teach every one to become a discoverer of new laws has not yet been found, and the student of logic as such seems (if we judge by past experience) to be the least likely

to find it. The logician can not pretend to be able to act as intellectual physician or trainer to the scientific specialist. He may at best, if he takes the unusual trouble of familiarizing himself thoroughly with the subject-matter of the various sciences, act a part similar to that of the analytic critic of literature—he may indicate significant identities and differences in the various sciences and criticise the adequacy of the evidence for certain general contentions. Such a comparative logical study would, if developed, be of inestimable value, but it would belong to applied rather than pure logic.

On the subject of induction I can but repeat the statement made some years ago by Bertrand Russell, that all inference is deductive and that what passes as induction is either disguised deduction or more or less methodical guesswork.

This statement has shocked many logicians who do not like to admit that in science as in other fields of life guessing can play a part. But it is to be noted that the fact that a proposition is arrived at by a process of guessing does not determine its truth or falsity nor the purely logical question of its relation to other propositions. It is therefore absurd to draw a sharp antithesis between induction as a method of discovery and deduction as a method of exposition. Deductive logic and pure mathematics generally deal with certain relations between propositions, and the knowledge of such relations is certainly one of the most potent instruments of scientific research.

A brief glance at some typical views of induction may perhaps make my meaning clearer.

The term induction has been used to denote among others:

1. Reasoning from facts or particulars to laws or universals (Boethius and the scholastics).
2. Reasoning which is based on the principle of uniformity of nature *i. e.*, like effects must have like causes (Mill), and
3. Disjunctive reasoning (Schuppe, Montague).⁵

1a. As to the first, we must start with the observation that science does not know or does not deal with absolute particulars or pure facts—at least it never draws any inference from any sense-data except when the latter are viewed as already embodying or illustrating certain universals. It would obviously be impossible to state what happened in a single laboratory experiment except in terms of abstract or universal properties, such as weight, velocity, change, *etc.* There is, therefore, in fact no such thing as reasoning from pure particulars.

1b. If the sharp metaphysical separation between facts and laws is waived, and induction is defined as reasoning in which the end or

⁵ Schuppe, *Erkenntnistheorie*, pages 53 ff.; Montague, *On the Nature of Induction*, this JOURNAL, Vol. III., pages 281 ff.

conclusion is more general than the beginning or premises, this account of the matter is still untenable. In deductive geometry or algebra we can pass by strict deductive steps from the nature of triangles (*e. g.*, in respect to area) to that of all polygons, or from the nature of integers to that of numbers generally (as in the binomial theorem).

2. Mill's account of induction makes it synonymous with reasoning by analogy. "This medicine cured my little girl, therefore it will cure yours." Now there can be no doubt that this is the way most people actually reason, in the sense that this is what they are conscious of as what goes on in their minds. But in truth the consequence follows from the premise only when your little girl is like mine in all respects in which the given medicine is applicable. Hence, as scientific medicine develops, the question whether their cases are alike comes to the foreground and the argument changes from a blind empiricism to an argument which tends to assume the explicitly deductive form.

3. The account of induction which makes it synonymous with disjunctive reasoning seems to me thoroughly sound and illuminating. In actual scientific inquiry we start with a number of merely or barely possible explanations. The cause of *A* may be *C*, *D* or *E*, or any other number of circumstances. If one of these hypotheses be true certain consequences should follow, and any failure of one of these consequences rules out the hypothesis and thus diminishes the number of alternatives. This explains how it may happen that a single experiment may lead to the elimination of all but one possibility and therefore the definitive establishment of a law.⁶ From this point of view Mill's method of agreement and difference⁷ has a limited usefulness as a method of eliminating the circumstances which are not causal, and thereby helping somewhat in finding the true cause. But it is to be observed that the efficiency of this method depends on our fundamental assumption as to what circumstances are relevant or possibly related causally to the given effect. If the true cause is not included in our major premise the "canons of induction" will not enable us to discover it. If any one thinks that I have understated the case for these canons of induction as methods of discovery, let him discover by their means the cause of cancer or of disorders in internal secretions.

XII. To sum up the position of this paper: The field of every science consists of the relations of certain constants and variables. The

⁶ This is the *schema* of a crucial experiment. In the actual history of science things are more complicated, and none of the historical instances of crucial experiments given in the logic books were in fact as decisive as the books pretend.

⁷ The method of residues is simply the disjunctive syllogism over again.

constants need not be enduring substances but may be the invariant laws according to which the changes take place. If the actually formulated laws of our physics can be shown to undergo change themselves, it can only be in reference to something else which is constant in relation to them. This justifies the Kantian contention for *a priori* elements in experience, in the sense that every science must assume some invariant connections or categories. The Kantians, however, are wrong in claiming absolute logical necessity for material principles such as those of Euclid's geometry, Newton's mechanics or Christian ethics. These principles are assumptions which may be necessary for some of the consequences drawn from them, but they are not absolutely necessary, since it is possible to reject these consequences. This view agrees with the experimental theory of knowledge and morals, except so far as the latter seems to repeat Hume's denial of objectively necessary relations or rules. Without the latter there can be no rational experiment or significant doubt.

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PROFESSOR SPAULDING'S NON-EXISTENT ILLUSIONS

PROFESSOR SPAULDING'S recent volume entitled *The New Rationalism* must be a source of delight to every realist of whatever school. Seldom has so thorough-going a defense of realism been made. Relatively little emphasis, moreover, has been put upon those special features which characterize that school of realism to which Professor Spaulding has for years belonged, and in fact by the omission of a few passages a dualistic realist might perfectly well accept all of the author's arguments and conclusions. The one point of importance upon which his views diverge greatly from those of other realists who do not care to call themselves "new" is to be found in his retention of "pan-objectivism" and his insistence that illusion, hallucination, and error must not be classed as mental. If in examining this part of Professor Spaulding's position I seem to be severe in my criticisms, I trust he will remember that I am prompted thereto by my sympathy with and my admiration for the greater part of his admirable book and by the conviction that he is nearer to the old and true type of realism than he is himself aware.

The question of illusion and error is touched upon, in various parts of *The New Rationalism*, but in no place is there an inclusive and systematic statement of the author's position upon the subject.

By putting together the various passages, however, which treat of this question, one finds three distinct answers to the common assertion that illusions are mental in their nature. These answers are, namely, the following: (1) illusions have a perfectly good causal explanation; (2) they consist in taking one entity to be another which it is not, or in localizing it in the wrong place or the wrong time; (3) they are not existents but mere subsistents.

The first of these answers will be recognized by the reader as one long made familiar through the writings of both neorealists and pragmatists. The convergence of the parallel rails when one looks at a long line of railway track, the straight stick bent in water, do not, we are told, require consciousness to explain them: "for the convergence may be a characteristic *of*, and have a locus *in the relational complex*, light-traveling-in-straight-lines-from-each-rail-to-the-eyes, or to a photographic plate, and the bentness be a characteristic of the *complex* light-rays-coming-from-the-stick-through-the-refractive-medium-of-water."

It can but strike the dualistic realist as odd that an argument so often answered and intrinsically so irrelevant as this should still find a place in a book of the high standard of *The New Rationalism*. The argument I have called irrelevant for the good reason that it has nothing in particular to do with the case. No one is concerned to deny that illusions have a physical cause. And, in the illustrations used, the causes are doubtless the ones pointed out by Professor Spaulding—the converging or bent light rays. But *are* the rays the rails or the stick? If not, what is the locus of the converging *rails* and of the bent *stick*? If the bent stick is not mental but physical, and if it be (as pan-objectivism must maintain) numerically identical with the straight stick, then is not the same stick both straight and not straight at the same time, and in the same sense? I see no way of avoiding this, nor am I at all helped by any explanations, however elaborate, of the physical and psychophysiological processes by which the sensation of the bent stick is brought about.

But the most formidable part of the difficulty of making illusions non-mental is to be found not in their sensory but in their perceptual aspect. There is no real deception in the ordinary illusion, such as the bent stick. But if, as sometimes happens, I not only have the kind of visual sensation which the bent rays from a stick in water naturally produce, but also *perceive* a bent stick—take the stick which is my object to be bent—then my perception with its implicit judgment is an error. The reality of error Professor Spaulding not only admits but insists upon. The reduction of illusion to error, is, in fact, one of the three answers which he gives to

the illusion problem to which reference was made above. But while it is true that a most important aspect of the illusion situation may justly be analyzed into erroneous judgment, it is plain that one can not in this way make illusion anything but mental. To seek to do so is to jump from the frying pan into the fire. For if illusion be error, what is error? Is it not even more obviously subjective in its nature than illusion itself? When taken off his guard, indeed, Professor Spaulding quite frankly admits that error is subjective and thus gives away his case. "The final and irreducible subjective element in error," he writes, "is only the psychological fact of the taking a thing to be what is is not." If "taking a thing to be what it is not" be "psychological" and "subjective," what need we of any further witness?

In more self-conscious moments, however, Professor Spaulding refuses to make this fatal admission, and invents the third way out of the difficulty which I indicated early in this paper. Errors, it seems, are not "subjective" nor "psychological facts" after all. Of course they are not physical. It results therefore that they can not be existents at all, but must be merely "subsistents." So far as I can find, Professor Spaulding nowhere states definitely that no errors exist, or ever have existed (even in the minds of his opponents), and I hesitate to affirm that he would deliberately stand for so astonishing an assertion. Yet in his table of the universe (on p. 494) he definitely places "false hypothetical entities, *e. g.*, phlogiston" among non-existing subsistents; and as no errors of any kind are placed in his list of existents, it seems clear that he stands for the assertion, which he hesitates to make explicitly, that no error has ever existed.

This non-existence theory is, at any rate, his final solution of the problem concerning "illusory and hallucinatory objects," such as "dreams" and the "snakes of tremens," as well as "imagined entities such as centaurs and satyrs." Dreams and their content do not exist. They never have existed. They simply subsist. The dream that I dreamt last night and the dream which no one ever dreamt, but which somebody who never lived might have dreamt if he had lived, are on exactly the same level. One never existed any more than the other. No evidence whatever is given for this astounding statement. This need surprise no one, however, for it is hard to see how any evidence for it could be found. Perhaps, therefore, one ought not to ask for any. One does, nevertheless, feel compelled to ask on what basis a distinction shall be made between existents and mere subsistents which shall rule last night's dream out of existence. Professor Spaulding is too well aware of the necessity for an answer to this question to let it go by unanswered, and

through several pages that form the kernel of his discussion he attempts to formulate his definition in such fashion as will answer to the needs of his theory. He starts out by defining an existent as "an entity that either has been, is now, or will be 'at' or 'in' a particular place at a particular time, or merely at a particular time, if the entity is not spatial, as *e. g.*, a conscious process is not" (p. 490). So far all is plain sailing, the definition being so constructed as to admit into the realm of existence both physical and psychical entities, the latter including "any process, simple or complex, of perceiving, remembering, imagining, reasoning, willing, and all emotions" (p. 494). Other passages show that sensations also belong here (*cf.* pp. 473-78). This use of specific spatial or temporal embodiment as the differentia of existence is a common one and will be acceptable to a great many. But, as transpires, it will not really be acceptable to Professor Spaulding after all, for it would only too plainly admit hallucinatory objects to existence. Hence there follows a series of logical wriggings in search of a satisfactory definition. The spatio-temporal differentiation quoted above is termed "partial" and a new one is attempted. "To be 'in' or 'at' or to 'occupy' a 'particular' space and time, both, or only one," we are now told, "is not enough to define or characterize existents. For other entities, such as dream objects, also have this spatial and temporal particularity. Therefore a complex existent must have *that full quota of characteristics*, or *be that full quota*, which the sciences of physics, chemistry, biology, psychology, and the like find it *empirically* to have." This at first seems to do the business of sweeping dreams and other undesirables out of existence. It ought to, for it was plainly, even admittedly, manufactured *ad hoc*. Yet when Professor Spaulding reads it over it turns out to be unsatisfactory after all. Even he is not prepared to deny that a dream has that full quota of characteristics which psychology finds an existent to have—(whatever that may mean!) "Existents," he admits, "are of two kinds, namely physical and mental. . . . Mental existents are to be accepted essentially as they are interpreted by empirical psychology, namely as processes or events that occur at a certain specific time." Hence the definition has not done its work after all, for if applied in such fashion as to rule dreams out of existence it would do the same for sensations. In despair, then, of constructing a definition by which dreams and hallucinations shall be excluded from existence while "perceiving, remembering, imagining and all emotions" shall be retained, Professor Spaulding falls back on dogmatism. Dreams, hallucinatory and imagined objects, although admittedly they are "experienced," "are *not* existents" (p. 492). And for lack of any better reason for his assertion, he returns to a

repetition of the utterly inadequate differentiation used in vain upon the preceding page. They are *not* existents "for they are found to lack that *full quota* of qualities, including temporal and spatial localization, which psychology and physics recognize as essential to objects that *exist*." Just what this full quota of qualities may be we are never told except that temporal and spatial localization are among them; and that temporal localization alone is sufficient to confer existence we are explicitly assured. Nor can it be said that by the sentence just quoted hallucinations, *etc.*, are ruled out of existence because they are not recognized by both "psychology and physics;" for if that be the principle of differentiation then normal mental entities are also ruled out of existence, and to this Professor Spaulding (very properly) will not for a moment listen. In short, either temporal localization is sufficient to differentiate the existent from the non-existent, or it is not. If it is, then dreams and hallucinations, dream objects and hallucinatory objects, exist. If not, then no psychical entities exist. Professor Spaulding can not have it both ways. What is sauce for the goose is generally thought to go pretty well with the gander.

In other words, Professor Spaulding, with all the ponderous machinery of modern logic at his disposal, has been quite unable to propose or manufacture a definition of existence according to which normal mental entities shall be existents and hallucinatory ones non-existents. Much less has he been able to give any reason for the distinction which he seeks, but fails, to draw. The *motive*, however, which prompted his attempt is perfectly plain and in fact comes out explicitly in his own clear statement. In the sentence following the one last quoted, in which he had asserted the non-existence of hallucinatory entities, he continues: "Therefore they are excluded from being psychological in character (as tradition has so long held them to be) by the hypothesis, now accepted at this point as established, that consciousness is not a substance or 'container'." Here the cat gets out of the bag. By hook or by crook, by logic or in defiance of logic as well as of experience, dreams, *etc.*, must at all hazards be kept out of the realm of existence, for if they were admitted, there would be no place for them but consciousness; and in that case one would have to acknowledge that consciousness was some sort of "container." To such extremes is a logician driven in the desperate effort to save a theory. If this be the New Rationalism, the shade of Aristotle may rest content that his logic is condemned as old.

In the sentence last quoted, the hypothesis that consciousness is not a "substance or container" is spoken of as "established." The reader may be a little put to it to recall how the hypothesis was established; but by going back over the preceding 492 pages he will

find that the argument in its favor consists in taking it for granted that only substances can be "containers" and then attacking the Aristotelian view of substance. Substance is a category of which the new logic makes no use; hence there is no such thing as substance; hence consciousness can not be a substance. Something like that, I gather, is the author's view, though here I may be misinterpreting him. In any case, I am not concerned to defend the Aristotelian or the medieval notion of substance. I am well aware that to call consciousness a substance would, in the psychological atmosphere of to-day, have the same effect as that of giving a dog a bad name. I would, however, point out that those who regard hallucinatory objects as mental, and who in that sense consider consciousness a "container," need not, and usually do not, consider consciousness a "substance." They may perfectly well define consciousness not as a substance but as a certain *class of entities* (a pious form of words to-day)—a class of entities, moreover, which may enter into enough different sorts of series, by being properly shuffled, to satisfy the most voracious and the newest logician. Consciousness as a class might perfectly well contain illusory entities without being a substance. The objections, therefore, to the mental nature of illusions based upon the difficulties involved in the Aristotelian substance are entirely negligible.

It is a bit odd that Professor Spaulding should be so insistent that the class of entities known as consciousness should not contain hallucinatory objects as well as normal sensations. For there is nothing in such a position in any way inconsistent with his own view of the nature of consciousness. The orthodox neo-realistic doctrine that consciousness is a relation he respectfully, tenderly, but none the less firmly rejects (p. 481). Consciousness for him is perfectly real, and conscious entities are existents and are quite distinct from physical existents. (See pages 253, 256, 373, 447, 484-85, 490.) To be sure, he analyses conscious entities into "dimensions," but these conscious "dimensions" remain a distinct class by themselves. Nor is the mental nature of hallucination in any way inconsistent with this view of consciousness. With a little manipulation it would be as easy to show that hallucinations are "dimensions" as to do the same for sensations. Nor is there anything in the nature of a class of "dimensions" which would make it incapable of being a "container" for hallucinations, illusions and errors. Not only, therefore, has Professor Spaulding been unable to prove that hallucinations and their content are non-existents; not only has he been unable even to formulate a definition of existence which would exclude them; he can not even show that there is anything inconsistent with his own theory of consciousness in the view that they are mental.

Why then, one is impelled to ask, does Professor Spaulding so often and so persistently attempt to rule them out of the mental world? He does not tell us. But the reader who looks between the lines will hazard a shrewd guess as to the real (though probably but half-conscious) motive. As I suggested at the beginning of this paper, Professor Spaulding is really much nearer to dualistic realism than he is willing to admit, and he clings desperately to the term "pan-objectivism" with its correlative assertion of the non-mental nature of illusions, as among the few last bonds that connect him with the radical neo-realism of 1910. But as he has already given away the case by his admission that normal mental phenomena are distinct existents, his loyal use of the approved form of words concerning illusions is hardly more than a somewhat pathetic expression of his sentiment for the good old times; and his type of pan-objectivism, if scrutinized closely, is easily seen to be but verbal. The assertion that all reality is objective has at least two quite distinct meanings. It may mean either (1) that there are no merely psychical existents, or (2) that all entities, whether psychical, physical or merely subsistent, are real objects, are "somewhere in the universe" (p. 487), have a reality of their own which is not dependent on anybody's knowing them. The first of these two meanings is the one for which the new realism stands and which Professor Spaulding very explicitly rejects. The second meaning is the one which Professor Spaulding has in mind when he asserts "pan-objectivism." To this kind of "pan-objectivism" a dualistic and by no means "new" realist might well be quite as loyal as the author of *The New Rationalism*, though he would be likely to suggest that the term "pan-objectivism" was a peculiarly poor one for the doctrine in question.

But we shall not quarrel over terms, and Professor Spaulding's rejection of the orthodox neo-realistic doctrine of consciousness, as shown by his most heretical differentiation of psychical facts from other entities, will be welcomed by the majority of realists as a new token of a reform movement within neo-realism. Signs of the disintegration of its radical pan-objectivism were, indeed, manifest even before it was fully formed. Very early in its history, and within the very volume which enunciated the platform of the new sect, Professor Montague rejected, if he did not in fact revile, the faith. And now another of the number has begun to see the light. I trust that neither Professor Montague nor Professor Spaulding nor the other members of this group, to which contemporary thought owes so much, will take it ill if I conclude by saying that we of the older

school of realism stand ready to receive back our brother realists with open arms and glad hearts.

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REVIEWS AND ABSTRACTS OF LITERATURE

Education for Character. FRANK CHAPMAN SHARP. Indianapolis: The Bobbs-Merrill Company. 1917. Pp. 442.

This book proposes no single panacea for the moral regeneration of the world. Possibly this is because the author has spent four years in actual moral instruction of high-school adolescents, as we learn in the preface. Indeed this fact furnishes the key to much that we find in the volume. It doubtless explains why the writer so fully and frankly recognizes the enormous difficulties in the way of imparting truly functional moral ideals. It certainly explains the sanity and practical nature of the methods described for achieving this end. The peculiar limitations as well as the advantages of the various means of moral education are clearly set forth. These limitations are such indeed that a simple total of their combined potencies would hardly be adequate. But it is held that in moral psychology, two and two instead of equaling four frequently equal nine or ten, which saves the situation. The enunciation of this principle raises an exceedingly important psychological problem which deserves special investigation.

The factors which enter into right conduct are three in number—knowing what is right conduct under given circumstances, the desire to do the right once it is known, and lastly “an open road between desire and action.” Moral instruction is concerned chiefly with imparting moral ideas while moral training is concerned with seeing that the ideas function in action. Both should conduce to the “love of the right” or the desire to do right, which is the most important and comprehensive of the three. The various agencies for securing moral training are examined. School discipline, pupil government, mutual aid in the class room, special organization of extra-curricular activities and (what is regarded as most important of all) the actual participation by the pupils in the civic work of the community, are described in the concrete as they have been administered in American schools. It is shown specifically how moral instruction, as contrasted with moral training, may be given in connection with the study of history, literature, civics and especially biography. But in addition there is required a systematic course of moral instruction fittingly called a course in the “conduct of life.”

Here the method of pouring in or exhortation must give place to that of inducing self-activity in moral thoughtfulness on the part of the pupil. A programme for such a course in the high school is worked out in elaborate detail. An appendix includes a somewhat similar programme for each of the first eight grades. The volume closes with a carefully chosen and annotated bibliography.

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JOURNALS AND NEW BOOKS

REVUE DE METAPHYSIQUE ET DE MORALE. March-April 1918. "*Le contrat social*" de Rousseau (*Suite et fin*) (Pp. 129-161): E. DURKHEIM. — A completion of the author's demonstration of the continuity of Rousseau's thought from the second *Discourse* to the *Social Contract*. *Note sur Descartes*. *Ce que lui rappelait la date du 11 novembre 1620* (Pp. 163-175): G. MILHAUD. — Evidence that the "fundamentum Inveni mirabilis" referred to in marginal note of the *Olympica* refers to telescopes for the observation of the stars. *L'art et la Morale* (Pp. 177-188): V. DELBOS. — This question can not be fruitfully studied either with too much simplification or too much abstraction. There is art outside of the field of morality and morality outside of the field of art, but there is, however, an ideal humanity that tends to realize itself under distinct forms, sometimes antagonistic, in science, art, and moral conduct. *Notes de critique scientifique*. *Encore la dégradation de l'énergie: Entropie s'accroît-elle?*: L. ROUGIER. *Enseignement*. *Pour les étudiants étrangers: à propos d'une licence de Français*: A. REY. *Etudes critiques*. *L'œuvre inachevée de Mario Calderoni*: J. RENAUD. *Questions pratiques*. *Partisans de la Force et Partisans du Droit*: G. SIMÉON.

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NOTES AND NEWS

FEDERATION OF THE PHILOSOPHICAL ASSOCIATIONS

At their last sessions both the American Philosophical Association and the Western Philosophical Association appointed committees having for their purpose the formulation of some plan of closer cooperation between these two societies, with which it was hoped that the Southern Philosophical Association would join. The committee of the Western Philosophical Association was instructed to draw up a plan of federation to be presented to the American Association for consideration at its ensuing meeting. It is advantageous, in the eyes of the committee, that this plan, even in a provisional form, be published in advance of the approaching session in order that the members of the association may give it preliminary consideration.

The object of the Western Association is, of course, primarily to find some form of workable organization for an association strong enough to maintain itself without weakening the work of the sectional groups. Their desire is that philosophy have in America a public unity of organization proportionate to the opportunities for influence that are opening out. Their plan is, of course, open to amendment, and indeed on certain points the committee is so doubtful as to deem it wise to make alternative suggestions. Following is their resolution and plan, perhaps not in all details as it will be finally submitted, but as essentially agreed upon.

Resolution and Plan of Federation to be presented by the Western Philosophical Association to the American Philosophical Association, December, 1918.

In the interests of the advancement of philosophy in America, both as an educational discipline and as a social force, the time is suitable for the formation of a federation of all the societies devoted to its cultivation. Such a federation should have for its objects: (a) The advancement of philosophical learning through the closer cooperation of its professional teachers and students, as by means of congresses, special publications, councils and the like. (b) The encouragement of philosophical activities amid the general public, especially by emphasis upon the social, political and religious bearings of

philosophical thought. (c) The closer union of philosophy with the other sciences, if possible by means of a periodic congress in which should join representatives of all the branches of learning for the discussion of their common problems and related programmes.

For the formation of such a federation, continent-wide in its scope, the following Articles are offered, to become effective upon their adoption by the American Philosophical Association and the Western Philosophical Association of the United States, as now (1918) existing; it being understood that the Southern Philosophical Association is invited to join with these. Upon the adoption of these Articles (or these Articles amended) by the first-named societies, the federation shall be regarded as formed. Its provisional officers shall be the officers of the federating associations, who shall organize themselves into a committee under the chairmanship of the president of the association which is first to adopt the plan of federation. It shall be the duty of these officers to summon the first federal meeting, or congress, not later than eighteen months after the formation of the federation.

Articles of Organization

ARTICLE I. The name of the federation of the Philosophical Associations of North America shall be "The American Philosophical Association."

ARTICLE II. The federation shall comprise the Eastern Philosophical Association (hitherto known as the "American"), the Mid-western Philosophical Association (hitherto known as the "Western"), and such other American societies as shall be duly admitted thereto.

Note.—Invitation is hereby extended to the Southern Philosophical Association to join the federation; while, at the earliest opportunity, the officers of the federation are expected to encourage the formation of subsidiary societies, especially, a Northern (or Canadian), a Western (or Pacific Coast), and a Middle American (or Mexican-Antillean) Association.

ARTICLE III. The regular members of the federal association shall be the regular (but not the associate) members of the federated associations. There shall be an associate, or subscribing, membership to the federal association, to be filled by nomination and election by the regular membership. Associate, or subscribing, members, shall have all the privileges of membership in the federal association, excepting that they shall have no right to vote in the transactions.

ARTICLE IV. The officers of the federal association shall be president, first and second vice-presidents, and secretary-treasurer [or, secretary and treasurer]. Their term of office shall be from the meet-

ing of the association at which they are elected to the next ensuing regular meeting. They shall be elected by a majority vote of a quorum of the regular members; and the regular members present at any such meeting shall be regarded as constituting a quorum of the association membership.

ARTICLE V. The council of the federal association shall consist of its officers and of the executive officers (not more than two in each case) of the federated associations. [Or, the council of the federal association shall consist of not less than six or more than twelve members, each federation to be represented by an equal number of councillors, to be elected at their regular meetings.] It shall be the duties of the council to fix the time and place of all meetings, to arrange for and supervise programmes, to superintend the issuance of publications, and to advise the executive officers in all matters of business or policy coming up in the intervals between regular meetings.

ARTICLE VI. The regular meetings of the federal association shall be biennial. The time and place of such meetings shall be fixed by the council, as per Article V.

ARTICLE VII. The biennial dues of each member of the federal association shall be five dollars. In the case of regular members, two dollars [equivalent to the present regular annual fee] shall be retained in the treasuries of the federated associations to which the members belong, and three dollars shall pass to the treasury of the federal association. In the case of associate, or subscribing, members, the total amount shall pass to the treasury of the federal association.

Note.—This Article is regarded doubtfully by some members of the committee, on account of the amount of the fee. It seems certain, however, that publication of the Proceedings of the biennial meetings can not be if the fee is lowered (and the Proceedings ought to be worth the price). Associate membership in the federated associations could provide for those who do not care to become members of the federal association.

ARTICLE VIII. The Proceedings of each biennial regular meeting of the association shall be printed in the form of a volume, a copy of which shall be sent to each regular and associate member whose dues are fully paid.

Note.—It has been suggested that the federal association undertake the publication of a philosophical journal, subscription to which could be included in the membership fee; or that it make arrangements with some journal at present published in America, which should become its official organ. Possibly, the association could advance the interests of all or a number of these journals by offering its members a clubbing rate, assuming certain financial obligations

toward them, and in return receiving elective editorial representation on their staffs.

ARTICLE IX. The council of the federal association shall encourage joint meetings of the American Philosophical Association and other societies devoted to the advancement of learning.

H. W. WRIGHT,

E. L. SCHAUB,

JAS. H. TUFTS,

B. H. BODE,

H. B. ALEXANDER, *Chairman,*

Committee of the Western Philosophical Association.

IN view of the changed conditions after the armistice, the Council of the AMERICAN PSYCHOLOGICAL ASSOCIATION decided to reconsider the postponement of the annual meeting. It has now been definitely planned to have a brief and rather informal meeting upon war topics on December 27 and 28, at Baltimore. A detailed announcement will be sent to members shortly.

Science for November 29th contains the programme in detail of the meeting of the AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE, to be held in Baltimore from December 23d to 28th, 1918.

THAT journal informs us also that "Professor ROSWELL P. ANGLIER, of Yale University, is a captain in the Sanitary Corps, National Army, at the Hazelhurst Field Medical Research Laboratory, Mineola, L. I. He has been engaged in research work on psychological tests for aviators and in instructing other psychologists to give, at other aviation fields of the country, tests already devised."

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY AND SCIENTIFIC METHODS

MR. RUSSELL AND PHILOSOPHICAL METHOD

THE conviction that philosophy has its basis and origin in the distinction between appearance and reality is perhaps the most persistent notion in the history of the subject. It is the function of philosophy to view things *sub specie æternitatis*, and thus to afford an escape from the aimless ebb and flow of mundane affairs. Despite the fact that each successive hope men set their hearts upon turns ashes, the belief in a reality that is not subject to the limitations of time and not amenable to scientific methods of investigation survives every disappointment and becomes an incentive to new undertakings. It is true, indeed, that the present generation has become somewhat more sophisticated. Our environment, in providing new agencies, new tasks, and new opportunities, has imparted too keen a sense of its immediate and urgent presence to be brushed aside cavalierly as mere "appearance." As a consequence the argument for a timeless reality proceeds along different lines. This modification in the mode of approach is well exemplified in the philosophy of Mr. Bertrand Russell, whose recent book entitled *Mysticism and Logic*¹ affords a convenient occasion for a consideration of the doctrine to which he has given a new formulation and a new defense.

In the new realism to which Mr. Russell's advocacy has given such great importance and prominence there is no attempt to get rid of our everyday world on the ground that it is simply an appearance. "The arguments for the contention that time is unreal and that the world of sense is illusory must, I think, be regarded as fallacious."² Mr. Russell is apparently all the more willing to make this concession because, from his standpoint, the question does not matter particularly. Time is perhaps real enough, but it is philosophically unimportant. The importance of time, as he says, is "rather practical than theoretical," and "both in thought and in feeling, even though time be real, to realize the unimportance of time is the gate of wisdom." In the type of philosophy which

¹ Longmans, Green and Co., 1918.

² *Mysticism and Logic*, p. 21.

is sometimes called evolutionism the notion of time is permitted "to become its tyrant rather than its servant, and thereby loses that impartiality of contemplation which is the source of all that is best in philosophical thought and feeling."³

The reason for this conclusion is that, according to Mr. Russell, philosophical propositions "must be concerned with such properties of all things as do not depend upon the accidental nature of the things that there happen to be, but are true of any possible world, independently of such facts as can only be discovered by our senses."⁴ That is, philosophy is "indistinguishable from logic;" and "logic, broadly speaking, is distinguished by the fact that its propositions can be put into a form in which they apply to anything whatever."⁵ "Evolutionism, in spite of its appeals to particular scientific facts, fails to be a truly scientific philosophy because of its slavery to time, its ethical preoccupations, and its predominant interest in our mundane concerns and destiny."⁶ Philosophy has no direct responsibility in such matters, for it is "the science of the possible;" and its procedure is determined by the fact that its deliverances are *a priori*. "A philosophical proposition must be such as can be neither proved nor disproved by empirical evidence."⁷

This emphasis upon the distinction between philosophy and the special sciences is based, of course, upon Mr. Russell's familiar doctrine regarding existence and subsistence. "Thus thoughts and feelings, minds and physical objects *exist*. But universals do not exist in this sense; we shall say that they *subsist* or *have being*, where 'being' is opposed to existence as being timeless. The world of universals, therefore, may also be described as the world of being. The world of being is unchangeable, rigid, exact, delightful to the mathematician, the logician, the builder of metaphysical systems, and all who love perfection more than life."⁸ This Platonic world of being or of universals constitutes the subject matter of philosophy and explains the detachment of philosophy from all things that have to do with existence in space and time. The old, familiar distinction is thus reestablished, but is placed on a more solid foundation. That there is a class of objects "in no way derived from objects of sense" is held to be demonstrably true. And since these objects or subsistences do not undertake to determine the actual

³ *Ibid.*, p. 26.

⁴ *Ibid.*, p. 111.

⁵ *Ibid.*, p. 75.

⁶ *Ibid.*, p. 32.

⁷ *Ibid.*, p. 111.

⁸ *Problems of Philosophy*, p. 156.

existence of objects in space and time, but merely mark out the limits or conditions to which existences must conform if they are to have being at all, they can and must be treated in abstraction from the conditions of actual existence. The method of investigation, accordingly, is the method of deduction or dialectic, which permits no appeal to concrete fact. The philosopher and the scientist, therefore, should find it possible to maintain an *entente cordiale*, without the annoyances occasioned by constant trespass on each other's domains.

The character of the ideal of knowledge which underlies this conclusion is indicated by Mr. Russell's distinction between immediate and derived knowledge. Immediate knowledge has to do with objects of acquaintance, which consist of sense-data and universals. "Acquaintance with objects," we are told, "essentially consists in a relation between the mind and something other than the mind;"⁹ "we have acquaintance with anything of which we are directly aware, without the intermediary of any process of inference or any knowledge of truths."¹⁰ While I have no desire to press the literal meaning of such a phrase as "a relation between the mind and something other than the mind," it seems pertinent to suggest that this expression, so reminiscent of historical dualism, embodies the ideal of knowledge involved in this dualism, whether the dualism itself be accepted or not. In acquaintance the subject is wholly concerned with what is immediately present; inference is supplanted by apprehension and faith is lost in sight. This kind of knowing is supposed not to require, or indeed to permit, any further analysis or elucidation. It is just plain fact, luminous with self-evidence when once the eye is turned in the right direction. Analysis and explanation are called for only when we attempt to go beyond what is thus immediately given. And the problem of explaining derived knowledge or "knowledge by description" turns out to be at bottom just the problem of reducing this knowledge to the type of simple acquaintance. According to Mr. Russell "knowledge concerning what is known by description is ultimately reducible to knowledge concerning what is known by acquaintance."¹¹ "Take for example a piece of reasoning in geometry. It is not enough that the axioms from which we start should be self-evident: it is necessary also that, at each step in the reasoning, the connection of premiss and conclusion should be self-evident."¹² In the physical sciences and in everyday affairs, it is true, such self-evidence is not

⁹ *Ibid.*, p. 66.

¹⁰ *Ibid.*, p. 73.

¹¹ *Mysticism and Logic*, p. 219.

¹² *Problems of Philosophy*, p. 216.

always attainable. The demand for evidence takes us back, in the end, to the principle of uniformity, which can not claim to be self-evident, but, at best, a matter of probability. Mr. Russell, accordingly, concludes that "no logical absurdity results from the hypothesis that the world consists of myself and my thoughts and feelings and sensations, and that everything else is mere fancy."¹³ The external world is, it seems, a construction which is in the nature of a concession to the *hoi polloi*, "in whom the human affections are stronger than the desire for logical economy;" who are too much engrossed in the affairs of living to "share my desire to render solipsism scientifically satisfactory."¹⁴ Whether the failure to share this desire is reprehensible or not the reader may determine for himself; the point that I am concerned to emphasize is that Mr. Russell's ideal and pattern of knowing is furnished by the notion of direct acquaintance and that this notion is, in turn, the lineal descendant of the dualism exemplified by Descartes and Locke.

While Mr. Russell adopts the standpoint of dualism in so far as the latter is embodied in the doctrine that there is a knowledge of immediate acquaintance, he rejects the view that what is thus immediately given is necessarily a state or impression of the knower. There is no *a priori* reason, as he contends, why the objects of acquaintance should not be objective realities; in other words, their real status must be determined by inquiry and not by antecedent bias. It appears, however, that a realistic interpretation, along the lines of Mr. Russell's philosophy, is possible only on condition that a new meaning be assigned to the notion of immediacy or acquaintance. In the philosophies of subjectism, states of mind are known directly because they involve no reference to anything beyond, and the truths of intuition are likewise known directly since it is taken for granted that their reference or validity requires no explanation. That is, the truths of intuition are not deprived of reference or validity, but the peculiar nature of reference and validity is not made explicit; with the result that the speculations of Descartes and his successors on the Continent were essentially dogmatic in character. In the case of Mr. Russell, on the other hand, the doctrine of immediate acquaintance seems to be so conceived as to eliminate the feature of reference altogether. Concepts and truths are made to stand on their own bottoms, without dependence on any element of reference, by being converted into objects of subsistence. Instead of endowing experience with a certain functional or instrumental character, this functional and temporal quality is cut loose from its natural relationships and transmuted into an eternal and immutable

¹³ *Mysticism and Logic*, p. 34.

¹⁴ *Ibid.*, p. 158.

reality, which is then offered to us as an object of immediate acquaintance. In short, Mr. Russell first accepts the premises of subjectism, which depend upon the contrast between the knowledge of what is immediately given and the knowledge that rests upon inference, and having thus secured his ideal of knowledge he builds out his world in the direction of a realm of subsistences in order to overthrow this contrast and gather up the quality or attribute of reference into the object itself and thus reduce all knowledge to the type of acquaintance.

The point that I wish to urge just now is that Mr. Russell's world of subsistence has no other basis than the desire to perpetuate the tradition of subjectism. That there is an antecedent distinction of the sort typified by the distinction between perception and inference is not to be denied. The attempt to account satisfactorily for this distinction has been a perennial source of trouble and vexation of spirit. Subjectivism holds that the objects of acquaintance are modifications of the mind, but fails to bridge the gap which intervenes between the subject and extramental objects. A favorite device of objective idealism is the identification of the self with all the rest of the universe. Mr. Russell has recourse to a realm of subsistence in which functions or uses are converted into objects and then presented for contemplation. In every case the underlying assumption is the dogma that perception is an affair of knowing and that knowledge is, consequently a matter of immediate, static presence; and the conception of knowledge thus uncritically adopted is then imposed upon the whole of experience, even at the cost of adding new dimensions, in the form of subsistences or transcendental realities, to this our world of space and time. That sense-perception is *per se* a case of knowing is not proved but taken for granted at the outset, and so the possibility that knowledge may be an affair of things representing one another is condemned without a hearing. Reflection, accordingly, is not centered primarily upon the interpretation of facts, but upon the requirements of theory. Our problem is no longer the analysis and interpretation of experience, but rather the construction of a universe, with whatever resources of imagination and language that may be at our command, which will conform to the requirements of a preconceived theory as to the nature of knowledge. And since construction of this sort recognizes no limits such as those which a scientist is bound to respect, but draws upon realms that are not subject to the jurisdiction of space and time, we have no means of verification save an appeal to logical consistency. In practise, however, the lack of logical coherence is not taken as evidence of error in the premises, but as an incentive

to renewed effort, and so our system grows from more to more. The result is inevitably that such labor does not serve, except incidentally, to give insight into experience, but becomes rather an exercise in logical ingenuity. Moreover, the results thus attained are likely to claim precedence over the facts of everyday experience, despite Mr. Russell's amiable desire to confine philosophical speculations to the realm of concepts. Since an infinite number series, for example, has been found to be a whole of which certain parts have as many terms as the entire series, the conclusion is drawn that "we live in an unchanging world," and that there is no state of motion.¹⁵ That is, dialectic is permitted to have the last word, so that there is no escape from the charmed circle of logical coherence. What dialectic really does, however, is to show us the meaning or implication of our concepts and nothing more. The inference that the universe includes a realm of timeless reals has no more warrant than the premises from which this conclusion has been deduced. "When a problem rests upon fictitious assumptions it can not be solved by pursuing the dialectic of these assumptions. To show that the problem is about a fictitious subject matter is to solve it. For even if mythical assumptions do produce a logical conclusion, the conclusion will be as mythical as the premises, and can not be regarded as the kind of solution which a reasonable mind seriously seeks."¹⁶

These comments, however, are not intended to imply a concession that Mr. Russell's doctrine does, as a matter of fact, achieve a logically coherent exposition of the facts which it undertakes to explain. In the end the attempt to reduce all knowledge to the type of acquaintance breaks down and leaves the world of ideas and the world of temporal existence in much the same mutual isolation as in the philosophy of Plato. As long as we remain on the level of mathematical concepts Mr. Russell's elucidation retains a certain degree of plausibility, but when we turn to his account of knowledge that has to do with matters of particular existence this plausibility evaporates rapidly. Mr. Russell's doctrine is, in brief, that denotation is not a constituent of the proposition which expresses a judgment. For example, in the judgment, "Julius Cæsar was assassinated," the real Cæsar is not an object of acquaintance, and so it becomes necessary to substitute for "Julius Cæsar" some descriptive phrase, such as "the man whose name was Julius Cæsar." It is true that we are not acquainted with the historic Cæsar, but we are acquainted with the written or spoken symbol by which he is designated, as also with the concepts "man" and "name." In this

¹⁵ *Ibid.*, pp. 81, 84.

¹⁶ W. T. Bush, *The Emancipation of Intelligence*, this JOURNAL, Vol. VIII., No. 7, p. 179.

new proposition "Julius Cæsar is a noise or shape with which we are acquainted and all the other constituents of the judgment (neglecting the tense in 'was') are *concepts* with which we are acquainted. Thus our judgment is wholly reduced to constituents with which we are acquainted, but Julius Cæsar himself has ceased to be a constituent of our judgment."¹⁷ This resolution of a judgment into its constituent concepts can be accomplished as readily in the case of false as of true judgments. "When we judge that Charles I died in his bed, we have before us the objects Charles I, dying, and his bed. These objects are not fictions: they are just as good as the objects of the true judgment."¹⁸ The judgment that Charles I died in his bed may be false, but in any event the constituents of the judgment, when regarded as concepts, are objective realities or subsistences, and realism still lives. If we suppose, for example, that Charles I had no bed, we need only distinguish between "his" and "bed" in order to secure the constituent concepts and thus provide ourselves with objects that are "just as good" as those of any other judgment.

It is not strange perhaps that Mr. Russell's mathematical predilections should find expression in this preference for detached concepts. In our dealings with matters of fact, however, the concepts which constitute our judgment do not display the same affinities and repugnancies as in the case of mathematics. It is no more of a logical contradiction to say that Cæsar was the discoverer of America or the inventor of the telephone than that he was assassinated. The concepts which are so carefully isolated by the elimination of denotation must in the end be related back to external matters of fact. Mr. Russell, accordingly, has recourse to the notion of "correspondence," and thus forsakes the criterion of immediate acquaintance. "A belief is true when there is a corresponding fact, and is false when there is no corresponding fact."¹⁹ Since the historic Cæsar is beyond our reach, this reliance on correspondence is essentially an appeal to a bystander who is not subject to our human limitations. Nor is the notion of correspondence much clearer when the fact asserted by the judgment is a fact of immediate acquaintance. "Suppose we first perceive the sun shining, which is a complex fact, and thence proceed to make the judgment 'the sun is shining.' In passing from the perception to the judgment it is necessary to analyze the given complex: we have to separate out 'the sun' and 'shining' as constituents of the fact."²⁰ These constitu-

¹⁷ *Mysticism and Logic*, p. 223.

¹⁸ *Philosophical Essays*, p. 177.

¹⁹ *Problems of Philosophy*, p. 202.

²⁰ *Ibid.*, p. 214.

ents must then be "combined" in a way that "corresponds" to the complex fact as given in perception; but the attempt to duplicate this unity by manipulating a pair of abstractions has no discoverable meaning, and the definition of truth as a relation of correspondence turns out, once more, to be a broken reed.

That in the field of science the notion of correspondence does not mean a static equivalence but a function of guidance or control is recognized, at least after a fashion, by Mr. Russell. "The law of gravitation enables us to calculate the motions of the heavenly bodies: so far as these motions can be observed they are found to agree with our calculations."²¹ He concedes, accordingly, that "the scientific conception of working is not incompatible with the pragmatist conception," and that the scientific working may, in a sense, be "regarded as a species of the pragmatic working." In his reaction, however, from the erroneous notion that pragmatism "admits, as a ground of belief, *any kind* of satisfaction to be derived from entertaining the belief,"²² (instead of the satisfactory working which means working in accordance with the programme or plan laid down by the idea) Mr. Russell harks back to the notion of a truth that has nothing to do with working of any kind, but consists in an extraneous relation between the idea or judgment and something else. Truth and falsehood are thus made to fall entirely and irretrievably outside the judgment, and pragmatism is condemned because it "desires religion, as it desires railways and electric light, as a comfort and a help in the affairs of this world, not as providing non-human objects to satisfy the hunger for perfection and for something to be worshipped without reserve."²³

Mr. Russell's faith in the deductive method suggests a close affinity between his philosophy and that of objective idealism. In starting-point there is indeed a wide divergence between the two. According to idealism it is possible to start with any given bit of experience and develop it dialectically into an all-inclusive reality. Mr. Russell holds, on the contrary, that "acquaintance with a thing does not logically involve a knowledge of its relations."²⁴ Yet back of this divergence there is a fundamental identity, for, in the last analysis, the ideal of immediate presence or acquaintance is also the ideal of knowledge that guides the destinies of objective idealism. Kant's proof in the Transcendental Deduction that all experience presupposes a certain measure and kind of organization, so that even the smallest fragment of experience embodies the

²¹ *Philosophical Essays*, p. 106.

²² *Ibid.*, p. 108.

²³ *Ibid.*, pp. 125, 126.

²⁴ *Problems of Philosophy*, p. 225.

"subject-object relation" plainly assumes that all content of experience is object of knowledge. Hence presence in experience necessarily involves direct presence to a unifying and relating principle. From our present standpoint the only difference between this doctrine and the dualism of Descartes lies in the fact that the Cartesian soul has been transformed into a principle of organization which pervades all experience. That this organization may be of some other kind and that knowledge may be a function which arises on occasion within the course of experience is rejected in advance. The things that serve as *instruments* of knowledge by becoming signs of other things, which thereby become *objects* of knowledge, must needs be regarded as themselves objects of knowledge, even at the cost of being committed to a kind of knowing that never was on sea or land. Hegel's dictum that thought "shuts us together with things" is interpreted not simply as a denial of dualism, but as an expression of Mr. Russell's ideal of knowledge as an immediate presence. For idealism the function of our human thinking is, therefore, simply to exhibit this antecedent organization of reality. But the argument which purports to show that there is such an antecedent organization and that our experience involves an "absolute experience" is, at best, merely a demonstration of what must be true if we assume that the whole content of experience is object of knowledge. In the case of both objective idealism and the philosophy of Mr. Russell ideas are substituted for facts; and "the technique of ideas is dialectic."²⁵

It appears, then, that the issue between Mr. Russell and objective idealism lies in the question regarding the implications of the assumption that knowledge is an affair of immediate presence. According to idealism the implication of this standpoint is the existence of an "absolute experience." According to Mr. Russell the given object is wholly given, and the "external world" is a construction which has in it an element of concession to our non-logical demands and prejudices. The two standpoints represent divergent attempts to apply and justify a conception of knowledge which is common to both and which is accepted as a heritage of the past and not as a deliverance of the facts. It is true, indeed, that neither standpoint has achieved a satisfactory measure of logical coherence. Not to speak again of the difficulties already mentioned, Mr. Russell's argument concerning the existence of an external world is of a question-begging character, as Professor Dewey has shown;²⁶ and the idealistic argument in behalf of a Constitutive Thought is equally question-begging in that this Thought has nothing in common with

²⁵ Bush, *loc. cit.*, p. 173.

²⁶ *Essays in Experimental Logic*, Chap. XI.

human thinking except the name. Yet such criticism misses its purpose if its final result is merely to bring about a refinement of logic and not a reconsideration of our premises. When a philosophy bids us turn our backs upon the affairs of this world and seek the fulfilment of our aspirations in the contemplation of an n -dimensional world, created from false premises and by a dubious logic, it is high time to remind ourselves that the true mission of philosophy is something quite different. The "emancipation" that we may expect as the reward of such contemplation is not a deliverance, but an opiate. If philosophy is to justify itself it must recognize and accept its obligation to aid in the creation and realization of human ideals, not in a realm apart, but in our everyday world of space and time and in the affairs of our common life.

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REVIEWS AND ABSTRACTS OF LITERATURE

A *Commentary to Kant's "Critique of Pure Reason."* NORMAN KEMP SMITH. London: Macmillan and Co., Limited. 1918. Pp. lxi + 615.

It is evident on the face of it that this massive performance must rank with the labors of E. Caird, Stirling and Adamson in Scotland, Green in England, Watson in Canada (nor should one forget the bold, if a little slapdash, pioneering of Mahaffy in Ireland, at the beginning of the seventies). Nay, more, the new *Commentary* stands alone as the contribution in English to *Kant-philologie*. In a word, it places the United States once for all on the map of Kantian studies. Whatever be his judgment upon its details here or there, the *Commentary* can not fail to give keenest intellectual pleasure to every competent Kantian, and to elicit his grateful admiration. Running to something more than 300,000 words, its bare elaboration, all else omitted, reduces a first impression, such as this review, to a mere foretaste. Only when we revert to the work time and again, as we shall, and use it familiarly in advanced instruction, as we must, may we hope to estimate it adequately *pro* or *con*. Professor Smith has won this meed of praise fairly. And I should like to add a word in recognition of the London Macmillans. So long as a publishing house is able and willing to undertake such a charge at such a time, no competent scholar need quail before the "hopelessness" of prospects in print. Some publishers, *ex abundante cautela*, can not see scholarship for text-books; others—all honor to them—recall Seneca's maxim, *non refert quam multos, sed quam bonos habeas*, to act upon

it. The great Edinburgh firm, R. and R. Clark, has put its best foot foremost in the essential matters of presswork and paper, reminding us that printing, no less than education and theology, is a "main industry" of the Scots capital. The proof-reading has been so good that I have noted but a single remarkable error. It occurs in the index, and is curious enough to warrant comment. My brilliant pupil, Mr. William Romaine Paterson, who chooses to be known by the pen-name, Benjamin Swift, is substituted for the author of *Gulliver's Travels*! This is indeed new evidence of the innate capacities of Schematism!

In the case of a work so complex, and complex so necessarily, one must attempt to give a clear view of the plan adopted by the author. At the outset, then, it may be said that cross-reference to Professor Smith's previous book, *Studies in the Cartesian Philosophy*, is indispensable—a good reason for its appearance on the title-page. Again, Professor Smith calls attention to a convenient device adopted in the table of contents:

Should readers who are already well acquainted with the *Critique* desire to use my *Commentary* for its systematic discussions of Kant's teaching, rather than as an accompaniment to their study of the text, I may refer them to those sections which receive italicized headings in the table of contents (p. ix).

Thus, giving careful and very full references to the pagination of the First and Second Editions of the *K. d. r. V.*, to Adickes's edition, and to the Berlin edition of the *Werke*, he operates a twofold plan. On the one hand, he restates the Kantian arguments in his own way, with frequent quotations, and supplying such elucidations of technical language as he deems requisite; on the other, he introduces lengthy comments of his own, chiefly with a view to overcome or explain the constant contradictions, apparent or absolute, which constitute perhaps the most remarkable, certainly the most baffling, feature of Kant's procedure, and are, paradoxically, as much merits as blots.

The *Critique* is not merely defective in clearness or popularity of exposition. That is a common failing of metaphysical treatises, especially when they are in the German language, and might pass without special remark. What is much more serious, is that Kant flatly contradicts himself in almost every chapter; and that there is hardly a technical term which is not employed by him in a variety of different and conflicting senses. As a writer, he is the least exact of all the great thinkers. . . . The contradictory character of the contents of the *Critique* . . . is inseparably bound up with what may perhaps be regarded as Kant's supreme merit as a philosophical thinker, especially as shown in the first *Critique*,—namely, his open-minded recognition of the complexity of his problems, and of the many difficulties which lie in the way of any solution which he is himself able to propound. Kant's method of working seems to have consisted in alternating between the various possible solutions, developing each in turn, in the hope that some midway position, which would share in the merits of all,

might finally disclose itself. When, as frequently happened, such a midway solution could not be found, he developed his thought along the parallel lines of the alternative views. . . . The composite character of the *Critique* is largely concealed by the highly elaborate, and extremely artificial, arrangement of its parts. . . . By its uniformity and rigour it gives the appearance of systematic order even when such order is wholly absent (pp. xx, xxi).

A good example of both Professor Smith's methods of procedure is furnished by the discussion of Time, in Part I., Section II. of the Transcendental Æsthetic. First, under the caption TIME (the small capitals indicating Kant, not Smith on Kant), we find some six pages devoted to a restatement of the five "Arguments," with a view to elicit the precise point of Kant's approach, and to consolidate the divergent lines of the First and Second Editions. This done, our author proceeds immediately to "systematic discussions" (indicated by italicised headings in the table of contents) of *Kant's Views regarding the Nature of Arithmetical Science*, and his *Conflicting Views of Time* (rather more than 14 pages). Then follow a series of GENERAL OBSERVATIONS ON THE TRANSCENDENTAL ÆSTHETIC, purely expository in character (12 pages). The section concludes with further "systematic discussions" of *The Distinction between Appearance and Illusion*, *Kant's Relation to Berkeley*, and *The Paradox of Incongruous Counterparts* (18 pages). After this fashion—the capitalized and italicized captions giving the clue in every case—Professor Smith exhibits the internal meanderings of Kant's thought straight through the *Critique*. Naturally, the element of interpretation (Smith on Kant) waxes most when we come to the Deduction, where we find no less than 131 consecutive pages devoted to decisive, even meticulous, exposition—a masterly achievement.

An Introduction and an Appendix complete the volume. The former consists of three parts, as follows. (1) An investigation of Kant's method of composing the *K. d. r. V.* This is essentially an excursion in higher criticism. Kant's correspondence, and the labors of B. Erdmann (1878–84), Adickes (1889–95), Reicke (1889–95), and Vaihinger (1881—), especially in the *Reflexionen*, the *Loose Blätter*, and the textual criticism of the *Critique*, are given due weight (6 pages). The mass of evidence thus furnished receives constant attention throughout the volume. (2) A discussion of Kant's relation to Hume and Leibniz (8 pages). This is further elaborated in the Appendix. I am not sure that the separation is the best plan, though I detect Professor Smith's reasons. After all, the matter is one of opinion. (3) Eight preliminary difficulties are elucidated here (rather more than 28 pages). These are—the *a priori*; Kant and logic; the nature of consciousness; Kant's phenomenalism; the distinction between human and animal intelligence; self-consciousness;

the distinction between sensibility, understanding and reason; the place of the *K. d. r. V.* in Kant's system.

As just noted, the Appendix offers "a more detailed statement of Kant's relations to his philosophical predecessors" (25 pages). Going behind Hume and Leibniz, stress is laid upon Descartes, Galileo, and the doctrine of representative perception. This leads forthwith to Berkeley (discussed also at pp. 155 ff.), and to further remarks upon Hume, with a comparatively brief conclusion on Leibniz-Wolffianism.

The Index is adequate, no more. It might have been a good deal fuller.

The Dedication to Adamson, Professor Smith's chief at Glasgow, is a charming piece of *pietas*; for, as those of us who enjoyed the privilege of his acquaintance are well aware, not only was he the acutest, but also the most learned of the first generation of Idealists. His untimely death, at the moment when his extraordinary equipment was on the point of being put to constructive use, prevented the completion of a *magnum opus* in the manner which Professor Smith perpetuates. This *Commentary* was Adamson's suggestion, and I sense the presence of his spirit continually.

Finally, Professor Smith gives us the welcome news, "I have in preparation a translation of the *Critique of Pure Reason*." Those who have sighed over Max Müller, whose knowledge of philosophy was sadly to seek, or over Meiklejohn, whose English is at least as difficult as the plaguey original, will murmur, "when the day breaks and the shadows flee away." I mention this promise to express the hope that the new translation will be *printed* with the *Commentary* in view; in other words, that, by some typographical device, Professor Smith will make it possible, even if it can not be made easy, for the student to use both together.

As I have hinted above, one must live more than a few weeks with this *Commentary* in order to undertake decisive criticism and—I am in no mood to look a real gift-horse in the mouth. Thanks rather than fault-finding meets the situation. Moreover, like every patient student of Kant, Professor Smith has quite disabused himself of the seductive notion that definitive pronouncements are possible. Pivotal events—crucial books among them—must be appropriated afresh by each successive generation. "The *Critique* deals with issues that are still controversial, and their interpretation is possible only from a definite standpoint."

In the first place, then, I think that Professor Smith may lay claim to the practise of his precept—"arbitrary and merely personal judgments I have endeavored to avoid." For the rest, questions at issue must remain at issue, thanks to perspective, as he recognizes

frankly. Thus, my own view of the problem presented by Kant contrasts with that of this *Commentary* because it belongs to the generation of Scots students before Professor Smith, and represents tendencies peculiar to the period falling between the work of E. Caird and the full stress of the reaction against "the perversely Hegelian character of Caird's and Watson's manner of interpreting the *Critique*" (p. 462). More than twenty-eight years ago (*Scottish Review*, July, 1890), I had the temerity to declare myself unable to accept Caird's great work as in all ways satisfactory—it was too smooth, presenting Kant as if he had read Hegel. As we were then in the stage of the dogmatism that accompanies hero-worship, the orthodox of course held a silly commination service over me, and I was banned with bell, book and candle. Naturally, I turned to Schopenhauer and Stirling for further ideas, but found them guilty of incredible misconceptions which, I am glad to note, Professor Smith has exposed without mercy. In particular, I came to see that the objective deduction, missed so completely by Schopenhauer and Stirling, implies that the subjective deduction (whereof Kant speaks in his customary, not to say loose, fashion) must be interpreted in terms of an objective system. Thus, my approach did not come by way of Neo-kantian criticism of the text, and this serves to explain such doubts as I entertain, not so much about Professor Smith's interpretation as about his emphases. But, after all, these reduce themselves to questions of relative stress. For instance, as I often used to say to Caird, I greatly doubt whether it is now possible to recover the influence of Hume in the decisive style to which Professor Smith tends; and, possibly, more may be said for Rousseau than the *Commentary* indicates, although not nearly so much as Höffding alleges. Again, I am not at all clear that higher criticism of the *Critique*, especially of the Deduction, enables us to reconstitute Kant's precise mental attitude in specific years. Nay, I am inclined to believe that his state of mind was actually a state of spirit, and depended chiefly upon his reaction to moral issues, itself a survival of his inbred Pietism. His permanent tendency here is, to say the least, in lurid contrast with that of the eighteenth century men, who are permeated by the cynicism of the *salon* or the gay trifling of my lady's chamber. In short, many of the contradictions incident to the first *Critique* ought to be appraised in the light of the second, which, at all events by the time the first came to be literally thrown together, was no afterthought. In a word, even granting the intellectual bias of the first, a purely intellectual discussion of Kant's outlook misses most important influences due to his practical interests. And, in a measure, Professor Smith seems to me to have fallen into this trap, perhaps unavoidably. On the other hand, he recognizes that Kant's epistem-

ological agnosticism does pass over into a metaphysic wherein the distinction between appearance and reality, enforced on this agnostic basis, becomes quite irrelevant. "The true critical teaching is that synthetic thinking is alone fundamental, and that only by a regress upon it can judgment be adequately accounted for" (p. 196). True. But, then, What is this synthetic thinking? One must seek it out in Kant's distinction between *Vorstellungen*, things in themselves, and *objects* of our representation; one must delimitate the problem by recalling that the last differ from the first no less than from the second. And this means that the conditions of unity in consciousness are also conditions of the possibility of consciousness. Kant's apparent agnosticism is valuable principally as a foil. It serves to show that, after all, he is thoroughly in earnest with the contention that only a metaphysic can deal with the problem on hand. Amphiboly is not the last word, as the discussion of the Physico-Theological Proof fully attests. And this leads at once to the considerations raised in the *Critique of Practical Reason*. If the moral law can not be regarded as illusory, can anything be so regarded which stands as a proven condition of consciousness? I need hardly say that Professor Smith is perfectly aware of all these points; but he does not attach sufficient weight to them on the whole interpretation. He would probably say, "I am interpreting the *Critique of Pure Reason alone*." And I would reply, "Yes, but you lay too little stress on these essential points, too much on philological adventures" cf. pp. 235, 243, 294, 397, etc.). But, these differences of opinion nowise cloud my appreciation of a splendid performance. For, as Professor Smith says,

The distinction between appearance and reality is not a contrast between experience and the non-experienced, but a distinguishing of factors, which are essential to all experience. . . . Like so many of the most important and fruitful of his tenets, these consequences are suggested by implication; or rather remain to be discovered by the reader's own independent efforts, in proportion as he thinks himself into the distinctions upon which, in other connections, Kant has himself insisted (pp. 416, 414 ff.).

In conclusion, the equipment of the author, seen in his sure steps over a wonderful sweep, suggests relevant, and not very comforting, questions about our whole method of philosophical instruction to-day. I, for one, gravely doubt whether philosophy can be saved by the pathetic material and fragmentary methods that afflict our Graduate Schools. The joysome prattle of the irresponsible pragmatic youth is not encouraging, even if that very old saw, "Go up, thou bald-head," directed at scholars who have borne the burden and heat of the day, suffice to raise a bitter-sweet smile. While the aridities of the wiseacres of realism (illustrated remarkably in a recent fat tome) remind one forcibly of the sad small-talk "proper" to mourn-

ers at a funeral; the very expression of emotion and "thought" serves to falsify both. Had we more books fit to stand comparison with this *Commentary*, the outlook would be less dubious by far. For, to be plain, philosophy is neither a combination of self-titillating assurance with purblind idiocy, nor of self-appreciative opinionatedness with an altruism that weeps over the mob and never does a good turn to a single individual. In any case, Professor Smith has made it perfectly plain yet again that those who forego profound scholarship also forego the right to indulge even superficial criticism.

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The Structure of Lasting Peace. HORACE MEYER KALLEN. Boston: Marshall Jones Company. 1918. Pp. xv + 187.

If the Allies are fighting for any one thing it should be for a righteous world after the war. It is not so much lack of power and means, as lack of imagination, good will, generosity and patience that makes a world of social and economic justice seem so remote. But the world is getting such an education in patience, self-sacrifice and social purposes, that its old helplessness, its old inertia of habit and tradition need no longer be treated so respectfully. The first thing to do in the way of getting a rational world is to really want it. If we really want it, the chief obstacle to getting it is a confusion of bad habits, outworn traditions and selfish interests. These however are not immutable. Measures can be taken to remove them and to prevent their coming back, if we really wish to and will to.

Of course the great obstacle at present to a righteous world is the German will, organized for conquering and exploiting the world. No peace can have the elements of stability that does not begin with making Germany powerless for harm in the future. A lasting peace will then have to be a peace dictated by the powers that are fighting for democracy. But it must be dictated in a spirit of loyalty to the real democracy of the future; it must not aim to recover and keep the sham democracy of the *status quo ante*. Our past experience in diplomacy, our precedents, are based on that sham democracy. And the hosts of interests commonly designated as capital and class are the mark of it, and these, after the German peril, are the second obstacle to justice and durable peace. To win back the old pluralistic nationalism, will be to perpetuate the old frictions and dangers. Only an organized internationalism in the form of a league of nations with arrangements for preventing the misunderstandings and cross-purposes of the past can transform humanity into a world society. Of this ideal America, though hardly perhaps aware of it yet, is the uncompromised champion, and President Wilson the spokesman.

And for this transformation we must depend not upon the forces to whom the past has been most advantageous, but upon those other human forces that the industrial society we know has so wasted, namely the world of labor. That the world of labor is capable of self-direction toward beneficent social reorganization has been shown by the labor party of England. And in all this organization of social intelligence, opportunities and resources, the most important instrumentality is education. "Take care of education and education will take care of the rest."

This is of course looking far ahead, but is a really international cooperative democracy more unlike our present piecemeal makeshifts than these are unlike the arrangements of the feudal system? And since the feudal system began to go to pieces, the movement of history has been in the direction of more and more comprehensive democracies. Group self-consciousness has struggled to expression and to the overthrow of irresponsible monarchy (except, of course, in Germany). The tragedy of history is the set-back that Napoleon gave to democracy and to international understanding. The harm he did the world can not, probably, be exaggerated. In Germany the old régime is so powerfully entrenched because there it has managed to get itself supported by the very principle of nationality, the progress of which it opposes. When the old régime is really defeated, we have every right to believe that democratic group-consciousness will overflow its old banks, since life itself will be internationalized through trade and industry. Thus, a world society defended by a league of nations is, after all, not a romantic dream, but the state of things that we have been actually approaching for a very long time. Anyway only a democratic social unification of the world can guarantee enduring peace. Germany aimed, no doubt, at a social unification, but it was to be an autocratic unification defended by German police. Peace will not come that way; humanity wants other things beside material prosperity. The democratic world society will, of course, need its policemen, and the responsibility for protecting that society must not belong to any one member of it but to the society itself.

That, as nearly as I can sum it up, leaving out the detail, is the thesis of Dr. Kallen's essay. A doubtful reader might call his argument optimistic and over confident. But where a great deal has to be said in a few pages there is not much space for qualification. The enthusiasm of the book is a noble enthusiasm, and enthusiasm, when it is noble, usually strikes observers as headed for disillusion. And some disillusion has come—the tragic process of the Russian Revolution, and more recently the decision of the American Federation of

Labor to cling to its traditional programme of class antipathy and party advantage in terms of wages, time and overtime. It is, nevertheless, well to repeat "Let the leaders of the American Federation of Labor beware how they answer the call of the representatives of the working classes of our Allies. It is these who to-day 'stand behind' the President, holding up his hands and reenforcing his power for peace and freedom. To refuse to work with them is to refuse to work with him" (p. xiii).

Such disappointments do not prove illusion. Dr. Kallen has called attention to a great many points that must be taken into consideration in any serious attempts to socialize the world, and his discussion is much more detailed and concrete than my summary suggests. And Dr. Kallen is no pacifist; Germany must pay the costs. There is such a thing as justice and Germany must know it; while there are no penalties for international crime, there is no international society.

I wish, however, that a place had been found for the patriotic and socially-minded capitalist, Henry Ford, for example. I am sure this country is full of him. Not every man that knows how to ride in the saddle is a tory and not every foot-sore brother is a statesman. I would not give the impression that Dr. Kallen thinks he is, but some who are tories and some who are foot-sore might jump to that conclusion. They would, however, be wrong. The book presents an idea, a purpose, which can, very likely, be realized only in part. But how great a part that is depends upon the will of those who create whatever comes about in the way of social and political reconstructions. And the education, which is so important, must be an education not of the few, but of the many.

The source of Dr. Kallen's faith is a high confidence in human nature, in its power, not to drift miraculously into Heaven, but to develop its own best potentialities when conditions no longer thwart its natural and prosperous growth; such confidence, no matter how often it be disappointed, is the beginning of effective purpose.

The chapter-headings indicate as follows the subject matter in detail.

Introductory: Precedent and Adventure in the Organization of Peace.

The "Principle of Nationality:" Natural Rights and the Evolution of Nationality.

The "Principle of Nationality:" Nationality and Sovereignty. Nationality and the Economic Life of States.

Nationality, Citizenship, and the European State System.

Some Problems of Readjustment: Political Boundaries and National Rights.

Some Problems of Readjustment: Contributions and Indemnities.
The Equality of Nations before the Law and Some of Its Prerequisites.

The Federalization of Sovereign States: A Precedent not According to International Law.

The Federalization of Sovereign States: Preliminaries, Conditions, and Principles of a League of Nations.

Epilogue: Human Nature and the Limits of Internationalism.

WENDELL T. BUSH.

COLUMBIA UNIVERSITY.

An Experimental Study of Abnormal Children, With Special Reference to the Problems of Dependency and Delinquency. OLGA BRIDGMAN. The Univ. of Cal. Press. University of California Publications in Psychology, Vol. 3, No. 1. 1918. Pp. 59.

Dr. Bridgman reports the relationship of mental age, together with some inherited and environmental conditions, to the groups of dependents and delinquents who have been examined in the psychological clinic of the University of California Hospital.

Two hundred and five children were classified as delinquent. For the 98 boys the age mode and average was 13; for the 107 girls the average was 15, mode 16. Both sexes had average mental age of 11 by the Binet scale (Goddard Revision). Counting all children of 11 years mental age with four years retardation as morons, and therefore in the definitely feeble-minded group, 32 per cent. of the total number of delinquent children are feeble-minded by this classification.

The average age of dependents is lower than delinquents, 10 for boys and 12 for girls, with average mental age a little over 8 for both. The smaller degree of retardation for boys is attributed to the lower average age, since the older boys pass over more quickly into the delinquent class. By the Goddard classification, 26 per cent. are morons or lower, 34 per cent. normal, 40 per cent. borderline (11-12 years).

These results show that children of both groups have a low mental age. The greater number, however, are in the moron group. This is especially true of the delinquents. Dr. Bridgman believes that her results confirm those of previous studies, which have stated a percentage of feeble-minded delinquents ranging from 28 to 89 per cent. It must be remembered, however, that these children were a selected group, since they were all brought to the clinic for examination. Besides the faults of the eleven-year level of the scale, which Dr. Bridgman admits, we find that the children above this mental age all have "serious defects of character," as may be read-

ily seen from the table showing the offenses, so that the majority are markedly abnormal, although they are not "feeble-minded" by Binet.

A study of home conditions in both groups shows that 45 per cent. of dependents have both parents inefficient, in the sense of being entirely unable to support themselves: 77 per cent. of dependents have one or both parents dead or absent from home; 67 per cent. of dependents and 71 per cent. of delinquents have one or both parents classified as socially "abnormal." Unskilled occupations prevail in both groups of parents.

The comparison of nationalities represented among the children with the total foreign population of San Francisco is interesting, although the numbers are too small for any conclusions. There is, however, a surprisingly large percentage of Italian children in both groups.

FRANCES HOLSOPPLE.

UNIVERSITY OF PENNSYLVANIA.

JOURNALS AND NEW BOOKS

REVUE DE MÉTAPHYSIQUE ET DE MORALE. May-June, 1918. *Civilization et philosophie aux XII^e et XIII^e siècles* (Pp. 273-283): M. DE WULF. - A study of the civilization of the period with special reference to the philosophic ideas it fostered. *La théorie de la relativité et le temps universel* (Pp. 285-323): E. GUILLAUME. - A study of the "chrono-geometric" problem that is set by the theory of relativity. *L'Art et la Philosophie* (Pp. 325-336): V. DELBOS. - Art and philosophy are not things destined merely to live side by side but are complementary manifestations, hierarchically ordered, of an ideal of human integrity and perfection. *Études critiques. La Métaphysique de Josiah Royce*: G. MARCEL. *Questions pratiques. Réflexions sur la force du droit*: R. H.

Kempf, Edward J. *The Autonomic Functions and the Personality*. New York and Washington: Nervous and Mental Disease Publishing Co. 1918. Pp. xiv + 156. \$2.00.

Perry, Ralph Barton. *The Present Conflict of Ideals: A Study of the Philosophical Background of the World War*. New York: Longmans, Green & Co. Pp. xiii + 549. \$4.50.

Scott, William Robert. *Economic Problems of Peace After War* (Second Series). Cambridge: University Press. 1918. Pp. xii + 139. \$2.00.

NOTES AND NEWS

PROGRAMME OF THE EIGHTEENTH ANNUAL MEETING OF THE AMERICAN
PHILOSOPHICAL ASSOCIATION AT HARVARD UNIVERSITY

Unless otherwise stated, all meetings will be held in the Social
Ethics Library, Emerson Hall.

THURSDAY, DECEMBER 26
8 P. M.

Informal Meeting.

Executive Committee Meeting (Emerson B).

FRIDAY, DECEMBER 27
9:30 A. M.

The Status of Ethics *A. A. Roback*

How are Moral Judgments on Groups and Associa-

tions Possible? *W. M. Urban*

Wrath and Ruth *H. B. Alexander*

Teleology in a System of Knowledge *J. M. Warbeke*

1 P. M.

Luncheon at Hampden Café

2:30 P. M.

Discussion: Vitalism and Mechanism

L. J. Henderson

H. S. Jennings

H. C. Warren

W. T. Marvin

R. F. A. Hoernlé

5 P. M.

Visit to Widener Library

7 P. M.

Dinner at the Colonial Club

8:30 P. M.

Colonial Club

President's Address: The Personalistic Conception

of Nature *Mary W. Calkins*

10 P. M.

Informal Gathering and Smoker at the Colonial Club

SATURDAY, DECEMBER 28
9:30 A. M.

The Psychology of Vitalism *F. G. Henke*

Continuation of Discussion on Vitalism and Mechanism

1 P. M.

Luncheon at Hampden Café

2 P. M.

Realism and Perception	<i>J. B. Pratt</i>
Principia Analytica	<i>H. M. Sheffer</i>
Imaginary Inference	<i>H. B. Smith</i>
The Definition of Americanism and the Theory of Relations	<i>H. M. Kallen</i>

THE president, Dr. G. E. Moore, opened the fortieth session of the Aristotelian Society on November 4 with an address on "Some Judgments of Perception." The question of the real nature of material things is approached by asking what we are judging when we make such judgments as "This is a coin." Two things seem to be certain, *viz.* (1) that we are always making some assertion about an immediately given object—an object which has sometimes been described as "the sensation which mediates our perception of the coin in question," and which will be called the sense-datum which is the subject of our judgment, and (2) that what we are asserting about the sense-datum is not, in general, that it is itself a coin. What is doubtful is whether we may not be judging that the sense-datum is itself a part of the surface of a coin, in a sense in which this can only be so if it is identical with "this part of the surface of this coin." This is only possible if, when we seem to perceive that a sense-datum is of a certain size, shape, *etc.*, we really only perceive that it seems to be so, in a sense in which it may seem to be so without being either judged or perceived to be so. Failing this, either (1) there must be some relation such that we are judging "The thing to which this sense-datum has this relation is part of the surface of a coin," and it seems doubtful whether there is any such relation, or (2) we must take some view of the type of Mill's.

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